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ABSTRACT

Effectiveness of the clinical teaching model (CTM) developed at Florida State University is documented in Volume II of the project's final report. Reviewed is literature related to teacher effectiveness and conceptual changes, conceptual models and instructional systems, and evaluation research in education. Research design and procedures are detailed for both formative evaluation (pilot field-testing the prototype program) and summative evaluation (measuring treatment effectiveness in achieving the desired objectives). Reported are formative evaluation data on junior, senior, and master's level CRM trainees which indicated such results as mastery of the objectives and a high level of proficiency on all models by all students. Summative evaluation results are said to have provided documentation that the clinical teachers produced significant gains in exceptional students' reading and arithmetic in contrast with a comparison group of special education teachers. A summary of the model's effectiveness contains recommendations for teacher preparation and for evaluation research on teaching. Nine appendixes are provided, including a survey of problems and benefit analysis, and a user's guide to the computer management system for the clinical teacher curriculum. (CL)

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THE CLINICAL TEACHER FOR SPECIAL EDUCATION

FINAL REPORT VOLUME TWO

EVALUATING THE MODEL

LOUIS SCHWARTZ AND ANDREW OSEROFF

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FOREWORD

Evaluation research in teacher education is primarily concerned with the improvement of pupil learning. Study of the relationships between teacher preparation programs and their effects on children in the classroom has historically challenged and frustrated investigators searching for an empirical definition of the "good teacher." Evaluation research utilizes "scientific research methods and techniques" (Suchman, 1967, p. 7) for providing decision making information as to the *value* of an effective, innovative, alternative treatment of a significant social and professional problem. The dissemination and diffusion of the successfully documented solution depends upon administrative leadership and advocacy for making policy decisions in order to offer alternative or parallel provisions to established practices. Implementation of the new program requires decision between the maintenance of existing provisions, or installation of the innovation within the operational resource and value system.

Evaluative research involves formative and summative evaluation procedures. Formative evaluation (pilot field-testing the prototype program) provides initial information for modifying, revising, adding, and/or deleting elements or specific characteristics of the innovation. These changes or refinements, based upon feedback processes, often require theoretical and design shifts for improving the overall performance of the treatment strategy. Summative evaluation, after sufficient field-testing and revisions of the prototype, provides evidence of the effectiveness of the treatment in achieving the desired objectives on the targeted population. In addition to the documented measure of program or treatment effectiveness, the general *value* of the innovation is then determined in terms of originally stated goals of the Project and the problems they were designed to solve.

> . . . evaluative research refers to those procedures for collecting and analyzing data which increase the possibility for "proving" rather than "asserting" the worth of some social activity. (Suchman, 1967, p.8)

As a proposed alternative teacher education program for special education, the Clinical Teacher Model (CTM) Project at Florida State University was supported by the U.S. Office of Education, Bureau of Education for the Handicapped, as a Special Projects, Prototype (P.L. 91-230) for the purpose of *establishing* and ***evaluating*** a noncategorical approach to the preparation of personnel for the field.

The purposes, rationale, and objectives for the Special Projects Award Program of the Bureau of Education for the Handicapped identified the need and commitment to support the systematic development and evaluation of "new directions to generate new effectiveness in teaching handicapped children" (U.S.O.E. Guidelines, 1970).

> Prototype grants will be used to implement and test new training approaches. A successful prototype grant should have as its outcome the establishment of viable training practices which can be incorporated into the regular award program for future funding to other training agencies in the Nation. These new practices should be directed toward alleviating current and projected personnel training needs in special education as well as improving the quality of special education personnel. (p.5)

The CTM evaluation research strategies afforded the framework at the outset for specifying the assumptions, goals, objectives, processes, and assessment techniques (See Volume 1). Innovative training practices need to be demonstrated at an institutional setting under favorable conditions and with developmental capital. A program that is designed with procedures which can be replicated, and that longitudinally studies training practices and their effects on a target population, provides decision makers with the data necessary for adopting, or adapting, the program under other similar conditions. This information, made available by dissemination and diffusion activities, provides the crucial link for consumers which is necessary for real impact on children and their teachers. The general lack of data for decision making was addressed by the National Institute of Education as they expressed the concern that:

> Not only is information of this kind generally unavailable about government sponsored programs, it is very rarely generated for innovations developed in the operating system. (1973, p.79)

Reflecting on the implications of this issue for federal funding of educational research and evaluation activities, United States Senator Claiborne Pell commented on this problem at the fourth annual meeting of The Council For Educational Development and Research:

> In the minds of Congress there dwells the question: does education research and development have any real impact on schools? Have all these new developments made any difference at all?
>
> There is another question not adequately answered, and tied up in this problem of effectiveness is this problem of dissemination of

> education research so that those programs which are shown to be successful can be utilized by other education agencies.
>
> Theories out of a lab with no field experience should not be trumpeted. Real accomplishment in teaching youngsters should. (1975, p.12)

The "impact on schools" of the FSU Clinical Teacher Model Project, and to some degree the USOE Special Projects Program, will be determined by the extent to which this and other prototypes will be "incorporated into the regular award program for future funding to other training agencies in the nation" (Martin, 1970, p.5). Evaluation research strategies offer a process for producing documentation useful for both the developers and consumers, while providing an accountable description of the innovation to the profession and supporting agency.

REFERENCES

National Institute of Education, Building capacity for renewal and reform: An initial report on knowledge production and utilization. December, 1973.

Pell, C. Building partnership for educational research and development. *Educational Researcher*, 1975, *4*, 11-12.

Suchman, E.A. Evaluative research: Principles and practice in public service & social action programs. New York: Russell Sage Foundation, 1967.

United States Office of Education ***Preparation of personnel in the education of the handicapped.*** Part 3, Special Projects. Washington, D.C.: U.S. Government Printing Office, 1970.

PREFACE AND ACKNOWLEDGEMENTS

Evaluating the Clinical Teacher Model Project is presented as Volume 2 of the FINAL REPORT to the United States Office of Education, Bureau of Education for the Handicapped, of a Special Projects, Prototype, conducted at The Florida State University. Volume 1 of this FINAL REPORT presents the establishment of the Model and the field tested curricula for both teacher preparation competencies and desired exceptional child behaviors. This Volume provides the formative and summative evaluation research rationale, objectives, models, designs, procedures, data, discussion, implications and recommendations. Evaluation of the Clinical Teacher Model Project provided documentation as to the effectiveness of an alternative, noncategorical teacher education program for special education.

For early and sustaining belief in the importance of evaluation as an ongoing, integral activity in program development the authors are indebted to Ms. Josephine L. Taylor. Ms. Taylor, Project Officer, Division of Personnel Preparation, Bureau of Education for the Handicapped, U.S. Office of Education, recognized that the innovative, noncategorical content and process of the Project required a traditionally respected, accountable evaluation.

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CONTENTS

Foreword v
Preface and Acknowledgements ix
List of Tables xiv
List of Figures xvi

Chapter 1 INTRODUCTION 1

STATEMENT OF THE PROBLEM 3
SIGNIFICANCE OF THE SPECIAL PROJECT 5

Chapter 2 REVIEW OF RELATED LITERATURE 7

TEACHER EFFECTIVENESS 8
CONCEPTUAL CHANGES 12
    The Emerging Clinical Teacher 13
    Alternatives, Evaluation, and Impact of Change 16
CONCEPTUAL MODELS AND INSTRUCTIONAL SYSTEMS 21
    Models 22
    Mastery Learning 23
    Systems 24
    Performance-Based Teacher Education 25
    Computer-Managed Instruction 26
EVALUATION RESEARCH IN EDUCATION 28
    Evaluation of Individualized Instruction 28
    Evaluation Models 30
    Design, Methodological and Criterion Problems 33
    Evaluation Rationale 37
    Evaluation Design 44
        Formative Evaluation 44
        Summative Evaluation 46
SUMMARY 48
REFERENCES 50

Chapter 3 PROCEDURES 63

APPROACH 64
FORMATIVE EVALUATION 67
    Objectives 67
    Formative Analysis Model Design 68
        Rationale for Model Components and Sub-Components 72
    Implementation Procedures 75
    Teacher Trainees 80
    Instrumentation 80

Performance Measures ... 80
Attitudinal Measures ... 81
Field Experiences ... 81
Data Collection ... 82
Computer Management System ... 82
Attitudinal Surveys ... 83
SUMMATIVE EVALUATION ... 83
Objectives ... 83
Design ... 84
Population ... 85
Instrumentation ... 86
Treatment ... 86
Data Collection ... 87
Limitations ... 87

Chapter 4 FORMATIVE EVALUATION RESULTS ... 89

COMPOSITE DATA ... 90
Proficiency Scores ... 91
Time Required for Mastery ... 95
Proportion of Available Resources Used ... 99
Infrequently Used Resources ... 103
Relationship Between Resources Used and Proficiencies Obtained ... 104
Relationship Between Time and Proficiency ... 105
Individual Student Performance ... 106
PROTOTYPE CURRICULUM PERFORMANCE DATA ... 128
Knowledge Objectives ... 128
Performance Objectives ... 130
Product Objectives ... 131
ATTITUDINAL DATA ... 133
Problems and Benefits ... 133
Observation Field Experiences ... 136
Diagnosis and Intervention Field Experiences ... 141
SUMMARY ... 142
REFERENCES ... 143

Chapter 5 SUMMATIVE EVALUATION RESULTS ... 145

CLINICAL TEACHER ANALYSIS ... 147
Pupil Achievement ... 147
Teacher Competencies ... 149
Individual Clinical Teacher Performance ... 150
COMPARISON GROUP ANALYSIS ... 151
EFFECT OF TREATMENT ... 152
Statistical Significance ... 156

Summary of Results 157
Limitations 157

Chapter 6 EFFECTIVENESS OF THE MODEL 159

SUMMARY 160
IMPLICATIONS 161
Recommendations for Teacher Preparation 162
Recommendations for Teaching Exceptional Children 164
Recommendations for Evaluation Research on Teaching 164
Research, Development and Diffusion 166

APPENDICES 167

A Clinical Teacher Trainee Population 169
B Criteria for Objectives, Performance Objectives Rating Scale, Criteria for Performance Measures, Performance Measures Rating Scale 170
C Survey of Field Experiences 176
D Survey of Problems and Benefit Analysis, Clinical Teacher Model Evaluation, Unanticipated Outcomes 178
E Documentation and User's Guide to the Computer Management System for the Clinical Teacher Curriculum 202
F Statements on the Reliability and Validity of The Metropolitan Achievement Tests 258
G Interrelated Areas of Special Education, Clinical Teacher Competency Rating Scale 260
H Group Clinical Teacher Trainee Performance Report (Juniors and Seniors 1972-73) 263
I Metropolitan Achievement Test Data on Pupils in the Classrooms of the Clinical Teacher and Comparison Groups 277

LIST OF TABLES

1. Sample Size—Clinical Teachers and Comparison Group.. 86
2. Summary of Clinical Teacher Trainee Proficiency Scores. 92
3. Time Used in Hours to Complete Each Module 96
4. Proportion of Resources Used 100
5. Correlation Coefficient Between Proportion of Resources Used and Proficiency 105
6. Correlation Coefficient Between Time and Proficiency 106
7. Resources Utilization by Module by Student 108
8. Summary of Clinical Teacher Trainee Proficiency of Knowledge Objectives 129
9. Summary of Clinical Teacher Trainee Proficiency of Performance Objectives 131
10. Summary of Clinical Teacher Trainee Proficiency of Product Objectives During Internship (1972-73 academic year) 132
11. Major Problems Indicated by Two-thirds or More of First and Second Year Trainees by Categories 134
12. Major Benefits Indicated by Two-thirds or More of First and Second Year Trainees by Categories 135
13. Beneficial Aspects of Field Experiences in Observation Worthy of Preservation as Related by Junior Trainees 137
14. Junior Trainee Recommendations for Modifying the Field Experiences in Observation 137
15. Beneficial Aspects of Field Experiences in Observation Worthy of Preservation as Related Retrospectively by Senior Trainees 139
16. Senior Trainee Recommendations for Modifying the Field Experiences in Observation 139
17. Beneficial Aspects of Field Experiences in Diagnosis and Intervention Worthy of Preservation as Related by Senior Trainees 140
18. Senior Trainee Recommendations for Modifying the Field Experiences in Diagnosis and Intervention 140
19. Clinical Teacher Population: Pre-and Post-Test Mean Standard Scores and Mean Grade Equivalents in Total Reading and Total Arithmetic 148
20. Mean Gains in Students' Standard Scores in Total Reading and Total Arithmetic by Individual Clinical Teachers 148
21. Clinical Teacher Pre-and Post-Mean Competency Ratings 149
22. Pre-and Post-Frequency of Responses on Clinical Teacher Competency Rating Scale 150

23. Individual Clinical Teacher (#6) Performance Illustrating Pupil Gains 151
24. Comparison Group Population: Pre-and Post-Test Mean Standard Scores and Mean Grade Equivalents in Total Reading and Total Arithmetic 152
25. Mean Standard Scores: Reading and Arithmetic for Individual Classrooms—Clinical Teacher Group 154
26. Mean Standard Scores: Reading and Arithmetic for Individual Classrooms—Comparison Group 154
27. Mean Standard Scores for Clinical Teacher and Comparison Groups in Reading and Arithmetic 155
28. Adjusted Mean Standard Score: For Clinical Teacher and Comparison Groups in Reading and Arithmetic 156

14

LIST OF FIGURES

1. Instructional System 65
2. Estimated Per Cent of Effort for Functions 66
3. Formative Analysis Model 69
4. Formative Analysis Model—Logical Analysis 70
5. Formative Analysis Model—Empirical Analysis 71
6. Mean Proficiency for All Modules 94
7. Mean Time Taken Per Module 98
8. Mean Proportion of Resources Used 102

CHAPTER 1

INTRODUCTION

The enormous growth of special educational programs and services for exceptional children and their teachers during the past twenty years has been accompanied by persistent problems and challenges. Despite an unprecedented expansion of federal, state, and local resources for the handicapped, only forty percent of the identified seven million exceptional children were receiving services in our nation's schools, with a critical shortage of special teachers amidst an oversupply of regular class teachers (Kirk, 1965 and Marland, 1971). Special education is the study of and provisions for exceptional individuals. Dramatic changes in the attitudes of society towards disability and handicapping conditions, reflected in local, state, and federal legislation and services, have markedly altered public school practices to provide for a wide range of unique individual differences. Legislation and programs for the handicapped have traditionally stressed the *differences* presented by the children requiring special educational services.

The post World War II period was marked by the growth of parent organizations, state and federal legislation, and increased funding for serving additional children identified as exceptional and requiring special education services. Severely retarded or "trainable" children, "brain-injured" or children with "learning disabilities," and "emotionally disturbed" children previously excluded or unidentified were enrolled in public school special education programs. Patterns of services varied considerably: some were for medically and psychologically defined disabilities or handicapping categories; some were for distinctive age groups; and others for various other services.

Also accepted into special education programs during this period were a large group of mildly handicapped children. However, the provision of services continued to center upon self-contained classrooms which had been appropriate for the more severely handicapped child. The lack of opportunity to share in and return to the regular educational curriculum insured that this "new" group of children would be served in a program containing provisions far more restrictive in nature than was needed for the benefit of the child.

This conceptual model and structure of special educational services was built largely without blueprints and emerged to meet the needs seen at the particular time. However, this period of expansion of special education for additional types, and increasing numbers of exceptional children and youth, simultaneously emphasized needs more precisely and highlighted the problems of professional manpower. The gap between knowledge and practice in the field seemed to widen.

The rapid quantitative growth of provisions, paralleled by sporadic concerns as to quality and efficacy of such emphases and practices, gradually shifted concepts and practices towards a more comprehensive, planned, and integrated approach. This change focused on common behaviorally defined outcomes and alternative strategies for their attainment in the most advantageous learning environment.

The realization that there was in fact no one "best" way to serve all handicapped individuals emerged during this period. The nature of special education must focus on the individual needs of the learners, and different learners need varying treatment in a variety of educational settings and environments.

With the acceptance of this philosophical position — that no one model could serve a population as diverse as exceptional children, in a country as pluralistic as the United States — interest emerged in the design of alternative models. These models enabled a community to select those provisions from a "cascade of services" which appeared most uniquely tailored to the needs of the population they were serving within the geographical and political reality of each situation.

STATEMENT OF THE PROBLEM

The establishment and evaluation of the Clinical Teacher Model as an alternative noncategorical teacher preparation program for special education is fundamentally part of the continuing search for an *effective* teaching-learning strategy. The Model is defined, described, and specified within an individualized instructional system. Philosophically compatible elements of the system were selected, designed, integrated, and installed to be supportive, and to interact harmoniously in attaining the purposes of the Project. The inextricably interdependent relationship among these elements highlights the operational characteristics of the system.

The goals of the Clinical Teacher Model Project at Florida State University were initially described (1968) in the institutional application for assistance under provisions of a Program Development Grant (P.L. 85-926, as amended). Planning activities during the year 1969-70 resulted in the formulation of specific Project objectives for establishing and evaluating the Model. A detailed description of these objectives and activities is presented in Volume 1.

Essentially the following are the problems addressed by the Clinical Teacher Model:

I Teacher Effectiveness
  a. Is it possible to identify necessary generic teaching competencies for producing common desired pupil behaviors among mildly handicapped children?
  b. Is it possible to establish a noncategorical teacher preparation program designed to produce both the teacher competencies and pupil behaviors?

II Evaluation of Instruction
  a. Does the model achieve the behavioral objectives (competencies) established for the Clinical Teacher?
  b. Does the Clinical Teacher produce the behavioral objectives established for the exceptional children (pupil gains)?

Since the inception of the Clinical Teacher Model Project, Schwartz (1969, 1971) has described two criteria for evaluating the effectiveness of this teacher education program. The "intermediate" criterion is whether the program achieves the behavioral objectives (competencies) established for the Clinical Teacher Trainee. The "ultimate" criterion is whether the teacher employing the Clinical Teacher competencies produces the behavioral objectives established for the exceptional children being taught (pupil gains).

It was therefore necessary to specify both the objectives for the Clinical Teacher Trainee, and for the target population of exceptional children. The Clinical Teacher competencies appear in chapter four of Volume 1 and the pupil behaviors appear in chapters five and six.

Both the Clinical Professor and the Clinical Teacher utilize an instructional system that assumes an interaction between the produced pupil achievement (effect) and the instructional process (treatment). This is generally referred to as the CTM matching model (Volume 1, p.82). An underlying assumption of the investigators is that the Clinical Teacher can diagnose and prescribe an effective and efficient match among various learner, task, and resource characteristics, thereby increasing the probability of success for the mastery learning of basic skills by the mildly handicapped. This system of individualized instruction provides an opportunity not only for *effectively* producing the desired behaviors, but also for doing so *efficiently* in order for the child to learn faster than a normal rate. Only if this can be accomplished will the mildly handicapped children be able to "catch up."

This report of a federally supported research and development activity will ultimately have to be translated, disseminated, and diffused to the field for impact, adoption, and/or adaptation. Decision makers need information regarding the rationale and background of the Project as well as information for assessing the value of this new instructional program in actual school classrooms. This demands clearly specified outcomes, replicable procedures, and data generated and reported by appropriate evaluation research designs on teaching and learning. The specification, field-testing, revision, and documentation of an *effective* alternative teacher education program required evaluation research strategies appropriate to the phenomenon being studied. As Hilgard (1972) has noted:

> An important aspect of research that is not at all incompatible with a full recognition of the role of inventiveness and innovation is, of course, evaluation. Too little attention has been paid to the outcomes of what appear to be desirable practices, in both their immediate and their long time consequences. The more attention we pay to outcomes in relation to purposes, the more quality control we can achieve. That is an important aim of the R & D enterprise. (p.21)

SIGNIFICANCE OF THE SPECIAL PROJECT

Several significant issues are addressed in the establishment and evaluation of the Clinical Teacher Model Project. Initially, the signal question of determining teacher effectiveness is part of the continuing search for a definition of the "good teacher." Conceptual and pragmatic questions underlying the study of individuals and "treatments" link both regular and special educators in an attempt to build a data base for the improvement of learning and instruction.

Dramatic growth and expansion of programs for the education of exceptional children during the post World War II period has been paralleled by a growing lack of confidence in existing "categorical" provisions and practices. Alternative instructional systems emerged (many noncategorical) which reflected changes in conceptualization and practice. Clearly evident was the need for carefully evaluated and documented descriptions of the effectiveness of these changes. Evaluation and accountability of these changes is gradually becoming a part of "mainstream" education in the actual school environment. Ultimately, the question of impact must be answered . What difference did these changes have on children and their teachers? Providing "effective" instruction for mildly handicapped children in the "least restrictive environment" offers a viable strategy for meeting recent legislative mandates and judicial decisions.

There are four critical issues of significance addressed by the Clinical Teacher Model Project.

1. The continuing attempt to identify the competencies of the "good teacher" and to document the "effect of treatment" by the impact on exceptional children.
2. The philosophical re-affirmation of the emphasis on individual behavioral outcomes.
3. The design and implementation of an individualized instructional system for producing both the necessary teacher competencies and the desired pupil behaviors.
4. Documenting the effectiveness of the Model utilizing a combination of evaluation research strategies appropriate to the questions studied.

To summarize the significance of this Special Project, it is the authors' belief that individual differences among learners, teachers, and instructional systems will persistently deny the advocacy of a single alternative to the diverse and complex problems confronting education. Exceptional children and youth and the heritage of special education offer dramatic testimony to this inescapable reality. The renewed interest and activity in individualizing instruction in the most advantageous environment provides adequate support for the search for alternatives. Innovative models of today run the risk of simply replacing old orthodoxies with new ones unless thoroughly evaluated, documented, and described as to performance, effectiveness, and efficiency. Above all, early adaptors in colleges and universities need to bridge the disparity gap between the realities of local school systems and their teacher education curricula. Students and teachers must become intimately and inextricably involved in the content and process of change.

Martin (1972), Associate Commissioner, Bureau of Education for the Handicapped (USOE), reflected the changing philosophy of "individualism and behaviorism," with increased emphasis on evaluation and accountability.

> In a variety of formats, a new emphasis on the individual is developing and will become more pronounced in the next decade. For example, teacher education programs are taking new form, reducing categorical approaches, exploring diagnostic and resource roles in addition to classroom teaching roles, focusing on subaspects of the learning process, e.g. language development or perception. These are attempts to respond to the needs of the child rather than to relate to a disability. Each year a larger proportion of Bureau of Education for the Handicapped grants for educating personnel go into special projects designed to reform the teacher education process, and in the schools the analysis of a child's needs, learning styles, and behaviors is increasingly common. (p.518)

REFERENCES

Hilgard, E.R. The translation of educational research and development in action. *Educational Researcher,* 1972, *1,* 18-21.

Kirk, S.A. Educating the handicapped. In U.S. Office of Education *Bulletin* 1966, No. 3, consultants' papers prepared for use at the White House Conference on Education. Washington, D.C.: U.S. Government Printing Office. 1965.

Marland, S.P., Marland calls for full education of handicapped. *Report on Education Research,* April, 1971.

Martin, E.W. Individualism and behaviorism as future trends in educating exceptional children. *Exceptional Children,* 1972, *38,* 517-525.

Schwartz, L. A training model and evaluation design for the preparation of the clinical teacher for interrelated areas of special education. Florida State University, 1969.

Schwartz, L. A clinical teacher model for interrelated areas of special education. *Exceptional Children,* 1971, *37,* 565-571.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This selected review of related literature provides the foundation, rationale, and historical perspective for the outcomes, processes, and products of the Clinical Teacher Model Project. It should be noted that a comprehensive review of the literature on individualized instruction was presented in Volume 1, Chapter 2, of this Final Report. The present chapter is organized in four sections: (1) Theory and research on the effects of teaching; (2) Background, rationale, and conceptualizations for the establishment and evaluation of the Clinical Teacher Model (CTM); (3) Conceptual models and instructional systems including the CTM elements of *outcomes* specified as *generic* teacher competencies and *common* pupil behaviors, and *processes* of individualized instruction containing performance-based teacher education (PBTE) and computer-managed instructional (CMI) modules; (4) Evaluation of instruction and including formative, summative, and representative designs for determining and documenting the effectiveness of the *products* of the system. Dissemination and diffusion activities are discussed.

TEACHER EFFECTIVENESS

Teacher effectiveness has been studied and described during this century; however, evidence of the "effect of treatment" has eluded investigators (Binet, 1909; Witmer, 1911; *Handbook of Research on Teaching*, 1963; *Encyclopedia of Educational Research*, 1969). Recent conceptual and methodological changes in evaluation research on teaching have encouraged a renewed optimism in studying the relationships between specific teacher pupil achievement (Dubin and Taveggia, 1968; Smith, 1971; and Gage, 1972).

Research into the *efficacy* of special education programs for the mentally retarded (Kirk, 1958; Blatt and Garfunkel, 1965; Goldstein, Moss, and Jordan, 1965) failed to demonstrate "effective treatment" and added to the dilemma with descriptive, methodological, and criterion problems. Emerging out of the frustration of the situation was the issue of group versus individual *effectiveness* of treatment.

Investigators studying the "effects of treatment" during this period of rapid growth were unable to account for the critical variable of the teacher in the education of exceptional children. Commenting on the education of teachers for special education, Cain (1964) indicated that under the pressures of this period of enormous growth, information for the practitioner was based upon "the collection of status data,. . . appraisal of the consensus of expert opinion, and . . .descriptions of programs in operation" (p.212). Suggesting "longitudinal studies . . . at the theoretical conceptual level . . . development of conceptual constructs and the testing of hypotheses" (p.212), Cain urged special educators to "concentrate on the problem of the education of our teachers" (p. 217) if the field is to move ahead.

According to Meisgeier (1965), research on effective special education teachers was non-existent. He noted a "lack of empirical information concerning the characteristics . . . of teachers of mentally or physically handicapped or the prediction of effective teaching of these children" (p.229). Although surveys and descriptions of existing special education teacher qualifications, competency statements, and state certification requirements were readily available (Wallin, 1914; Wallin, 1934; Wallin, 1937; Martens, 1940; Featherstone, 1950; Clayton, 1952; Mackie, Williams, and Dunn, 1957; Doward, 1963; Balow, 1966; Hewett, 1966; Council for Exceptional Children, 1966), the "paucity of research on the characteristics of special education teachers" (Jones, 1966) compounded the problems of this period.

Special education, however, was not alone in self-criticism about teaching and learning in the classroom. Conant's *The Education of American Teachers* in 1963 shocked the academic community and publicly conveyed the growing lack of confidence in schools and their teachers. Turner and Fattu (1960) expressed the frustrations of the era:

> Seventy years of research on teacher effectiveness have not added much to our systematic knowledge, and it is difficult to see how another seventy can do any more if the same procedures are followed. (p. iii)

In the forward to a "provocative" book *The Preparation of Teachers: An Unstudied Problem in Education* (Sarason, Davidson, and Blatt, 1962), Coladarci stated several "embarrassing" assumptions currently underlying teacher education: (1) "That verbalized knowledge is a sufficient condition for effective teaching behavior . . ." and (2) "[that] the criterion for curriculum improvement begins and ends with consensus or majority agreement of faculty" (pp. viii-ix). As an alternative to existing patterns of teacher preparation and the continuing gap between the every day function of the teacher and the curricula by which they were being prepared, Sarason, Davidson, and Blatt offered a conceptual and procedural approach that served as the stimulation for the development of the Clinical Teacher Model. Describing the teacher as "a kind of psychological diagnostician and tactician," the authors raised several basic issues. Regarding teacher preparation, they proposed "as a first step, detailed descriptions which allow one to state specific assumptions and provide direction for the development of relevant techniques of evaluation" (p.121).

Kirk (1965) summarized recent developments in the education of the handicapped and raised several basic issues related to the preparation of professional personnel:

> Under the pressure of extreme shortages of professional personnel, a major issue becomes whether to (a) focus on immediate needs in terms of the numbers of special educators without regard to quality; (b) concentrate on quality in the preparation of professional personnel, even though it may mean a decrease in the numbers thus prepared; or (c) find a radically new method of accomplishing both goals at the same time. (p. 102)

The Council for Exceptional Children (1966) in *Professional Standards for Personnel in the Education of Exceptional Children* suggested the direction for future changes.

> It is possible that from studies of commonalities and differences among the specializations, new categories will arise, approaches to

> teacher education will be modified, pupil assignment will be quite different, and laboratory tested instructional patterns will emerge. (Doyle, p.iii)

Suggesting "alternative solutions" to the problems presented by "the shortage of special education teachers," Jones (1966) offered a "long range . . . total research program" directed towards identifying "special educational teaching" that would "combine the most promising of these variables into a model which would maximize the explanatory power of the individual variables" (p.256).

Commenting on the recent research literature in special education, from the traditional six categories to the current "proliferation" trend, Johnson and Blank (1968) offered a preview of future events.

> Many, if not all, of these latter groupings can and do overlap the older, traditional categories, including the gifted. Children with any level of intelligence and or physical or sensory handicap, may also be handicapped in one or more other ways. The trend appears to be in the direction of grouping according to function, insofar as learning is concerned, and away from the physical or mental characteristics which have little or no direct value for education. Future editors of CEC's research review will undoubtedly reflect this change in approach. (p. x)

In a comprehensive and critical review of research on "educational intervention" in mental retardation, Sarason and Doris (1969) summarized major studies to date and urged researchers in the field to "develop more complex theories and a more adequate technology which will bring forth new knowledge about the relations between conditions and human performance" (p.111). Stressing the need for applying basic or "laboratory-like research findings and theory" to "real-world situations," Sarason and Doris were "concerned with interventions or actions which by their consequences allow evaluation of underlying conceptualizations and theories" (p.93). Focusing on the type of future research that can "develop the conceptualizations and techniques adequate to mirror the complex realities of a classroom, a program, a setting," the authors indicated the complexities and time required to study and understand the "global terms" involved:

> One of the major and formidable tasks of future research is to conceptualize these terms in ways which communicate clearly and objectively to the reader the attributes of the particular setting and their relationship to and interactions with the personalities involved. (p. 107)

Smith and Neisworth (1969), in a critical review of existing research practices, echoed this shift in conceptualizations and recommended that investigators studying the various problems presented by exceptional children should use "designs that reflect more realistic environmental settings" (p.25).

> Certain programs of treatment or intervention which are theoretically promising have not shown significant advantages for the experimental subjects when the data are analyzed in this fashion. The possibility exists that the treatment program was highly influential, but that differences between the groups were not apparent because investigators frequently failed to consider the possible interaction of other significant variables and their influences in the performance of the subjects on the dependent variable. (p.26)

Critical of previous studies failing to provide for the "heterogeneity" of the population being studied, the authors urged that "intervention" type research "be longitudinal to provide a more realistic evaluation of treatment procedures" (p.26).

Paralleling this period of sobering awareness of the lack of evidence on the effectiveness of existing special education practices was a gradual change in concepts and the emergence of alternative strategies. Major conceptual shifts regarding "categorical" provisions for the handicapped and dramatic judicial decisions and legislative mandates re-affirming our nation's commitment to education for *all* children appeared (Dunn, 1968; Gilhool, 1973). As alternative instructional provisions and strategies emerged during this era, new service delivery systems for handicapped children appeared, changing the roles of professional personnel and their preparation programs, with an increasing demand for accountability and performance evaluation of the changes being advocated (Schwartz, 1971; Haring, 1970; and Deno, 1970).

Summarizing this era in special education, Reynolds (1975) notes these changing conceptualizations and practices occurring in the field:

> In the busy quarter of a century from 1945 to 1970, the categorical programs led to the development of broad special education departments in school districts and in colleges and universities. For the first time, it became possible for workers in special education to look at the commonalities of children across the categories. More similarities than differences were found. Many special educators came to the realization that the categorizing and labeling of children by handicaps was an unnecessary factor in making educational decisions for the children. (p. x)

Current research on teacher effectiveness has centered upon new models and programs of teacher education. Clarke (1971) summarized the developmental and evaluation activities for the ten model teacher educational programs supported by the USOE, and proposed theoretical and design considerations for future research focusing on the relationship between teacher behaviors and pupil achievement.

> Macro research could also be on still larger groupings generally termed teaching style. The magnitude of macro research will probably mean that much micro research, on the units or elements of programs, will precede. Here the Models have made a tremendous contribution through the development of hundreds and even thousands of modules. One can anticipate dozens of studies of the pretest-treatment-posttest-timelapse-second-posttest type, if teacher education students are streaming through modules, each of which requires, say, four hours. Such studies may well develop instrumentation useful for further research in teacher education. One can also anticipate studies of the type where high performers on a given module and low performers on the same module teach pupils whose gains in some characteristic are compared (with no significant difference). There may be studies of the time taken to master a module to criterion, related to variables such as the candidate's personality, attitudes, or even to student performance. (pp. 149-150)

The Clinical Teacher Model Project offers renewed optimism for the continuing attempt to document the efficacy of an individualized instructional strategy for teachers of exceptional children.

CONCEPTUAL CHANGES

Significant changes in conceptualizations concerning exceptional children, patterns of services and programs, and the preparation of personnel gradually emerged during the 1950's and 60's. Martin (1972) reflected upon this change on the national level by highlighting the increasing importance for special educators to concentrate on the behavioral needs of the individual, utilizing the process of individualized instruction.

> A basic tenet of special education has always been to focus on the individual. The strategies for achieving this goal continue to evolve. The predominant strategy today, in its most oversimplified sense, is to reduce the complexity of educating handicapped children by reducing the task to dealing with small, relatively homogenous groups called special classes. We have discovered, however, that using etiological labels to establish homogeneity is less efficient than we expected. And so we are exploring other categorization systems, the relevant behaviors of the child, the

> type process to be learned, etc. The ultimate reduction of this process is to move beyond small groupings to individualized instruction. (p.517)

Several early attempts were made to re-conceptualize the existing disability categories and formulate more relevant behavioral descriptions within educational settings. Stevens and Birch (1957) proposed a classification system for clarifying the term "brain-injured children"; Kaya (1961), Levine (1961), and Reynolds (1962) offered changes in the conceptual framework for special education services and programs; Stevens (1962) developed a broad "taxonomy" for special education relating "somatopsychological" variables to educationally significant "domains"; Hewett's "hierarchy of educational tasks for children with learning disorders" (1964) and his "hierarchy of competencies for teachers of emotionally handicapped children" (1966) offered "concise" and "objective" structure to these areas of special education; Blackman (1967) proposed an educationally relevant "taxonomy" based upon the "psychoeducational characteristics of the mentally retarded"; Quay (1968) outlined a "conceptual framework" for *all* exceptional children wherein "assessment, for grouping, for instruction, and for remedial techniques in terms of observable behavioral variables" (p.25) would replace existing special educational classification and placement practices.

THE EMERGING CLINICAL TEACHER

The conceptualization of the Clinical Teacher as a "diagnostician and tactician" had historically marked the education of the handicapped; however, curriculum developers, teacher educators, and researchers had failed to attain this long sought-after aspiration for an effective intervention and treatment strategy (Schwartz, 1967, a,b,). Contemporary advocates of *clinical teaching*, i.e., Blatt (1959); Johnson and Myklebust (1967); Peter (1967); Lance (1966); Dunn (1968); Smith (1968); Peter (1972); and Smith and Neisworth (1975) continue to urge the adoption of this strategy. Translating these concepts into a teacher preparation program for special education Schwartz (1971) attempted to attain one of the most persistent historical objectives of the field. The inspiration and idealism of Jacob Pereire (teaching the deaf to speak), Valentine Hauy (education of the blind), Jean Itard and Edouard Seguin (education of the retarded), coupled with the hopes of Samuel Laycock (every teacher a diagnostician), and Samuel Kirk (diagnosis and remediation of learning disabilities), and the continued emphasis on clinical and prescriptive teaching, influenced the projection of the Clinical Teacher as a generic need for the future.

Kanner (1964), Doll (1967), and Balthazar and Stevens (1975) reviewed the historical and pioneering efforts of special educators. The "clinical teaching" process of today was clearly evident in the early eighteenth century work of Jacob Rodrigues Pereire with the deaf, which included:

> Scientific observation,
> Use of case history,
> Adoption of methods to the individuality of the pupil,
> Sensory substitution and sensory reinforcement,
> Progress through developmental sequences,
> Education in terms of social needs,
> and the principle of proceeding from the known to the unknown.
> (Doll, 1967, p. 176)

Pereire inspired Itard who in turn stimulated Seguin in their educational treatment of the "feebleminded." Seguin's work in Paris attracted Samuel Gridley Howe (known for his advocacy and demonstration of effective methods of instruction for the "sightless and deafmutes" in America during the mid-nineteenth century) who visited Seguin and invited him to Boston for his assistance in establishing the Massachusetts School for Idiotic and Feebleminded Youth. Howe joined with Dorothea Lynde Dix and Horace Mann, well known advocates of mental health and educational reform. Seguin remained in the United States, organized several state institutions for the retarded, and was elected first president of what is now known as the American Association on Mental Deficiency.

The "scientific method of instruction" originated over two hundred years ago with physicians concerned with effective treatment of severely handicapped individuals, and was continued into the twentieth century by psychologists working in the public schools.

Binet and Simon (1961) described their work as "inspired by the desire to serve the interesting cause of the education of subnormals" (p.163). Initially they were concerned with developing new school administrative policies for these children, i.e., "the type of establishment to be created, the conditions of admission into the school, the teaching force, and the pedagogical methods to be employed" (p.82). Binet and Simon were strong advocates of the belief that "the precision and exactness of science should be introduced into our practice" (p.82).

Kanner (1964) summarized Binet's contribution to the continuing search for an effective instructional strategy for improving the learning of individuals:

> It is well to remember that the primary purpose of the task assigned to Binet was to direct "a study of measures to be taken,

> showing the benefits of instruction for defective children." This was, in a way, the practical application of some of the ideas cherished by Seguin who had declared hopefully: "The primary aim of classification is to attain a gauge of mental activity that shall facilitate learning." Indeed, the scope of the study went far beyond the original objective of selecting children who were in need of instruction in special classes. Binet, aided by Simon, examined thousands of children of different ages, presenting to them tasks of varying complexity. He tabulated the responses and thus determined statistically what the majority could do and could not do at a given age. He thus established a scale which set up a norm of performance. With the help of this procedure, it was possible to learn to what extent any *individual* child conformed to, or deviated from, the norm of average. (p.122)

Witmer (1911) reported a *clinical* approach to teacher preparation in his description of the teaching of children in a special class for six weeks during the summer of 1911, at the Psychological Laboratory and Clinic of the University of Pennsylvania:

> The actual teaching of the special class was an educational experiment, a sample of what special instruction should be, in a sense a model, which we hope may be of service to American teachers. (pp. 6-7)

Combining "Clinical Psychology and the Professional Training of Teachers" (chapter 9, pp. 262-275), Witmer provided a demonstration class and research laboratory for "teachers of backward children to observe these children in actual school room practice, and . . . . to investigate these children at first hand" (p.268).

Systematic observation of exceptional children "in actual school room practice" was echoed by Mackie, Williams, and Dunn (1957) and Blatt (1959) as one of the most important "clinical experiences for all teacher preparation programs. While the heritage of "clinical teaching" is clear, the separate functions of diagnosis, remediation, and evaluation were traditionally performed by various professionals. Professional preparation programs either specialized in diagnosis (psychology) or remediation (education), while the "clinical approach typically makes use of the combined talents of a number of highly trained professionals from a variety of fields" (Otto and McMenemy, 1966, p.7). Although cognizant of the "dichotomy" between functions in this "clinical approach," Otto and McMenemy stressed the interrelationship of the strategy.

> It should be noted that the dichotomy between diagnostic and remedial techniques is preserved mainly for discussion purposes; in practice such a dichotomy should not exist. Diagnosis and

> remediation are concurrent in good remedial teaching: diagnosis results in dynamic teaching which, in turn, is constantly evaluated. (p. 34)

Defining and describing "clinical teaching" as a comprehensive "approach to remediation of psychoneurological learning disabilities," Johnson and Myklebust (1967) illustrated this conceptual "schema" and assumptions:

> Clinical Teaching does not assume that the same methodologies are applied to every child. Rather, it stipulates that each child presents a problem with its own idiosyncratic characteristics. The teacher is equipped to adjust her approach to the dynamic pattern of the relationships between the strengths and weaknesses peculiar to each individual; she adjusts her approach, the child is not expected to adjust to her methods. She expects him to perform according to his potential but she is aware that chronological age (not mental age alone) and opportunity for learning are influential and must be considered when planning a remedial program. (p. 64)
>
> Underlying these considerations is the principle that the teacher must develop the greatest possible degree of balance among the behavioral functions by individualizing the program for each child or each group of children. She recognizes that her approach depends on and involves *direct observation of the patient* (child) and that success can be *achieved by applying objective methods to the description, evaluation, and modification of human behavior.* (p. 65)

Earlier, Dunn, Phelps, and Kirk (1958) explored alternatives to the problems facing special education teachers due to this dichotomy of functions. "Those who diagnose have little contact with the future of the child and those who manage or educate him usually have very little contact with the diagnosticians" (Kirk, 1958, p.40). Dunn's recommendation for preparing a special education teacher to perform "her own diagnosis" as an integral function of her teaching, was more fully described under the sub-title "A Clinical Approach" in his article, "Special Education for the Mildly Retarded—Is Much of It Justifiable?" (1968).

ALTERNATIVES, EVALUATION, AND IMPACT OF CHANGE

New approaches in special education, assessment of their effectiveness, and renewal strategies have highlighted current developments in this field. A clearer distinction between the educational needs of "mildly" and "severely" handicapped children has generated alternative administrative provisions, and modified manpower preparation patterns and descriptions of effective innovations for widespread dissemination and implementation.

Descriptions of these alternatives have been reported by Meyen (1971); Reynolds and Davis (1971); Schwartz, Oseroff, Drucker, and Schwartz (1972); Deno (1973); Mann (1974); and Burrello, Guarino, and Poinsett (1974). Although many of these programs utilized contemporary strategies available from educational technology, *systematic* evaluation procedures appeared conspicuously absent, thereby limiting an assessment of their effectiveness. Several projects were incomplete at the time reported, thereby affording some hope that documented results of these changes may be forthcoming.

Alternative manpower preparation programs for special education (supported by the U.S. Office of Education, Bureau of Education for the Handicapped and the Bureau for Educational Personnel Development), although emphasizing various roles in a "cascade of services," appeared to be utilizing newly available educational technology in program design, development, and evaluation. Both the *content* and *process* of teacher preparation for special education appear to be dramatically changing. Several of these changes, i.e., "Clinical Teachers" (Schwartz, 1971), "curriculum consultants" (Meyen, 1971), "consulting teacher" (McKenzie, 1972), "prescriptive teaching" (Stellern, 1972), have been defined in terms of competency statements describing their function in various special educational environments. The procedures for identifying these competencies, designs for preparation programs, and evaluation techniques similarly varied.

Current comprehensive reviews of special education (Mann and Sabatino, 1973, 1974) highlight these major changes in practice and research. Moving away from "categorical distinctions," the "trend of the times" features reviews focusing on such innovations as "information-processing models," "systems application," and "computer uses in special education."

These rapidly occurring changes in special educational practices are simultaneously producing new problems and challenges for the field. As the evolving needs of handicapped children and their teachers are re-assessed and translated into urgent legislative mandates and judicial directives, the gap between knowledge and practice has widened. The need for dissemination, diffusion, and renewal strategies for the adoption and implementation of effective alternative practices remains unfulfilled.

Lilly (1973) observed that the "lack of impact of educational research on changes in educational practice," a phenomenon not unique to special education but rather common to the entire field, required alternative evaluation and dissemination strategies. Arguing that research in education is conducted "for the sake of increasing knowledge in a given area of study, as opposed to creating change in schools and classrooms" (p. 210), Lilly summarized studies of educational change and described the major forces that appeared to determine "if educational innovations are to have a chance to succeed" (p. 215).

> These factors are (a) personal characteristics of the initiators and, most important, of the instructional personnel involved in conceiving and carrying out the innovation; and (b) the political situation in, and surrounding, the system in which the change is to be made. (p.214)
>
> Thus, the politics involved in educational innovation can be a potential barrier to use of a research-based model for change. To proceed as though the political influences do not exist, however—simply because decisions made on a political basis are not always "rational," or based on deductive logic and empirical accounts of technical adequacy—seems in itself irrational. (p.216)

Whether "educational program evaluation" and "dissemination packages," advocated by Lilly as alternatives for providing decision-makers with the data for implementing innovative changes in practice, will overcome these personal and political factors remains to be determined.

The USOE, Bureau of Education for the Handicapped, and the National Institute of Education Task Force on Dissemination supported a study to "Assess, Document and Spread Exemplary Programs for the Handicapped" (ABT Associates, 1973, p.1). The seventeen programs, reported in comprehensive case studies, described "exemplary services for handicapped people in the area of career education, early childhood education, and manpower development." (p.1) The study included design, procedures, and criteria for program selection, on-site data collection, and case study preparation.

> The case studies ultimately were to provide educational decision makers with information on successful or notable features of the selected programs for potential replication and/or adaption. (p.1)

Selection criteria were generated by seven experts in the field of special education who were not informed as to the original fifty programs identified for study. In addition to the "exemplary" and "notable" features of the programs reported in this study, criteria for their selection reflected increasing concern for "integration opportunities–mainstream," "extended involvement–staff, parents, consumers, community representatives, etc." and "program accountability–on going evaluation process which assesses the effectiveness of the program" (p.8).

Among the three programs reported in the area of Manpower Development, The Florida State University Clinical Teacher Model Project was presented. This comprehensive interim study of the operational CTM Project was reproduced in The Council for Exceptional Children's *Imprint Series* (1974), highlighting the "notable features" of (1) individualized instructional curriculum, (2) performance-based teacher education modules of instruction, (3) clinical field-based practicum experiences in local public school resource rooms, (4) computer-managed instructional system for providing information on curriculum and student progress, and (5) program evaluation design including preliminary formative data.

The seventeen programs reported in the USOE study, while representing the sample of "exemplary or model" educational projects from the fifty identified by the USOE, reflect the alternative practices and emphasis on accountability emerging in this field. Although the "state of the art" was by no means conclusive and the dissemination of products was underway, the need was expressed for "technical assistance" for diffusion and implementation activities. The availability of assistance for diffusion activities was limited due to a lack of resources available at the time for either the developer or consumer.

At a recent "Conference on Special Education in the Great Cities" (Mann, 1974), the problems of accountability and renewal strategies appeared as a central theme in another changing practice. Recognizing that "mainstreaming" mildly handicapped children in regular classes has been motivated by "The three 'l's'-Leverage, Legislation, and Litigation," Whelan and Sontag (1974) indicated that "The Bureau of Education for the Handicapped anticipates being an active partner in this process" (p.5). Describing the priorities and grant programs of the Bureau which included "mainstreaming," Whelan and Sontag focused on "the training needs of the regular educator," the question of "pre-service in contrast to in-service," and the need for "cooperative statewide planning" in addressing this emerging alternative practice for the handicapped, concluding with an earlier pledge by Herman (1973, p.148):

> Responsibility and accountability will be the hallmark of federal action in concert with local and state decisions makers at the local and state education departments and at the departments of special education in universities and colleges. (Whelan and Sontag, pp.5-6)

The evaluation of the changes in special education and their impact on exceptional children and their teachers promises a new era of comprehensive service and accountability in the most advantageous environment. The need for documented and effective alternative practices remains as a constant reminder to those advocating change. In addition to support and evaluation of new practices, Martin (1972) reported an increasing monitoring and accountability of existing programs.

> This year we are following this new planning model in supporting teacher education programs in more than 300 colleges and universities, involving an expenditure of $35 million. Teacher education programs are being asked to identify their objectives based on analysis of their students' needs for information and skills. The colleges and universities will also be asked to evaluate their progress toward meeting these objectives. At the same time the programs have new flexibility in distributing Federal support funds and in developing new approaches to the task. (p.522)

As these alternative practices are documented and become available, a major effort will have to be undertaken to prepare leadership personnel and other consumers with the competencies and an understanding of these new systems.

A future "scenario" for renewal was forecast by Ashcroft (1974), Director of the National Center on Educational Media and Materials for the Handicapped.

> A midwestern university faculty member who obtained his preparation as an early recipient of a graduate fellowship under P.L. 85-926 feels the need for professional growth. Having risen to associate professor and having been successful in categorical special education for teacher education, he has recently been asked to engage in competency based, noncategorical teacher education using modularized instructional materials in such areas as diagnostic and prescriptive teaching. While he has fairly clear ideas about the competencies that the "new" teacher should have, he has had neither the time nor the skills to develop the multimedia, modularized instructional packages that would facilitate the new approach to competency oriented teacher education. He has some ideas about an instructional media package in the area of language development that he would like to develop. He is eligible for a sabbatical leave and will be given some assistance with cost-of-living differential and relocation expenses if he could spend his sabbatical leave in the CASPR program at the NCEMMH on the campus of The Ohio State University. He would contribute to the NCEMMH a field-based understanding of teacher education problems as they are related to special education in midwestern schools. In obtaining his own professional self-renewal and a credential for his own promotion, he would provide manpower for a significant NCEMMH project

> and become a future field agent for field trials and dissemination. (p.3)

Commenting on the institutional problems in the "adoption of new practices" and "the confusion that attends transplanting," Simches (1974) cited several problems confronting large urban centers.

> Categorical programs exist that must be replaced or significantly modified before the new model can take hold.
>
> [There must be] dependable advocacy for the change, full commitment to it at the superintendent level.
>
> There must be a feeling of ownership on the part of those who must implement the new practices. (pp.35-36)

Although these controversial issues are by no means resolved, dramatic changes in the delivery of special education services and in the preparation of teachers reflect these emerging concepts and practices; at the same time there is a continuing lack of information as to their effectiveness and impact on children.

CONCEPTUAL MODELS AND INSTRUCTIONAL SYSTEMS

Translating the changing conceptualizations regarding the special education of exceptional children and the preparation of their teachers into an alternative and viable model required an instructional system and evaluation strategy that was philosophically compatible with the search for an "effective treatment" for individual learners. Linking the historical precedents for individualizing instruction with contemporary educational technology provided the *process* for establishing and evaluating the effectiveness of the *outcomes* of the Model.

Cognizant of the persistent challenges and complexities inherent in the search for empirically defining the *good teacher* and determining the "effects of the treatment for each particular child" or "the educative value of one pedagogical method compared with another" (Binet and Simon, 1961, p.83), the investigators approached the problem based on the assumption that both the *learning and teaching processes* must be studied together (Gage, 1972, p.42). Recent optimism from both regular and special education researchers studying individual differences, individualized instruction, and evaluation of the relationships between these parameters in actual classroom environments (Cronbach, 1957, 1967; Suchman, 1967; Tyler, 1969; Bracht, 1970; Reynolds, 1963; Jones, 1966; Reynolds and Balow, 1972; Blackman, 1972) encouraged a renewed assault on this persistent and critical problem.

At a symposium on current developments and problems in training and research in teacher education, conducted by the American Educational Research Association, Smith (1971) introduced the problem confronting the field:

> Were it not for the fact that about one thousand higher institutions are producing 200,000 beginning teachers per year, there would be little point to this symposium, for the chief purpose of research on the education of teachers is to improve the programs of teacher preparation in these institutions. These programs have developed over the last hundred years, and especially since the beginning of the present century, on the basis of meager and inadequate knowledge acquired largely from the practical experience of teachers, general psychological principles, and studies in philosophy and the social experiences. The problem which confronts those who are concerned with research on teacher education involves a quest for more dependable knowledge of teaching behavior — its elements and their influence on pupil learning. But even if there were an abundance of such knowledge, there would still be the problems of training teachers to use it in their practice and of inducing institutional changes that incorporate these training procedures into preparatory programs — a task comparable to rebuilding vehicles while they are in motion. (p. 1)

Presenting newly emerging conceptual frameworks and models of instruction, Smith offered several alternatives for contemporary research in teacher education.

This section reviews the related literature providing the rationale for the selection and design of the critical elements of the CTM Project, i.e., conceptual model, individualized instructional system including PBTE, CMI, and evaluation research strategies.

MODELS

Guilford and Merrifield (1960) defined the term *model* as a "set of constructs specified in such a way that their formal connections are evident" (p. 13). Models are designed as preliminary conceptualizations, integrating and synthesizing a large number of diverse elements into a comprehensive generalization indicating patterns and relationships.

Models of *instruction,* i.e., Winnetka Plan (Washburn, 1932), Individually Prescribed Instruction (IPI), (Glasser, 1968), and Project PLAN (Flanagan, 1969), are well known examples of individualized curricula strategies. *Conceptual* models, i.e., "spiraling" (Bruner, 1960), "mastery learning" (Carrol, 1963), "hierarchical conditions of learning" (Gagne, 1965), and a "matching model"

(Hunt, 1971) are illustrative of theoretical paradigms for the design of instruction. Bloom (1968) transformed several *conceptual* models into an effective *instructional* model for specifying educational objectives and improving the mastery learning of school subjects. Early supporters of the specification of educational objectives (Thorndike, 1913; Burke, 1918; Parkhurst, 1929) and contemporary advocates (Tyler, 1934; Mager, 1962; Lindvall, 1964; Popham, 1969, among others) were all concerned with improving teaching and learning through individualizing instruction.

Joyce and Weil (1972) described various approaches and uses of educational models.

> Over the years, then, a great many educational models have been developed by people engaged in distinctly different kinds of educational activity. Some are based on empirical work, others on theories, some on hunches, and some on speculation about the meanings of theories and research done by others.
>
> Educational models, in other words, can be used in three ways: for the making of curriculum plans, as guidelines for the teacher's interaction with students, and as specifications for instructional materials. (p. 7).

MASTERY LEARNING

Among the various definitions of aptitude, usually employed to account for individual differences among learners, Carroll (1963) and Bloom (1968) advocated the conceptualization of "aptitudes as measuring the amount of time required to learn a task to a given criterion level under ideal instructional conditions" (Block, 1971, p.5). The critical variable in Carroll's model appeared to be the *relationship* between the "quality of instruction" and student aptitude as determining the *time* necessary to attain mastery of a specific task. Bloom further expressed this concept in instructional terms by focusing on the systemtic specification of learning tasks and the strategies for their achievement. Bloom, et al. (1956), Gagne (1968), Turner (1972), and others have organized structural designs, schemata, and criteria for learning and instructional strategies. These emerging conceptual and instructional models dramatically altered the existing notion of learner aptitude as affecting achievement.

> However, if students were normally distributed on aptitude but each learner received optimal quality of instruction and the learning time he required, then a majority of students could be expected to attain mastery. (Block, 1971, p.7)

Although aware of the extreme differences in learner aptitudes, ranging from the upper five percent to the lower five percent of the "aptitude distribution," Bloom, Hastings, and Madaus (1971) speculated that "the relationship between aptitude and achievement should approach zero. . . [when] the kind and quality of instruction and the amount of time available for learning are made appropriate to the characteristics and needs of *each* student" (p.45). Stressing the variables of "quality of instruction" and "sufficient time," Bloom, Hastings,and Madaus believed that "95 percent of students (the top 5 percent plus the next 90 percent) can learn a subject with a high degree of mastery . . .that the grade of A as an index of mastery of a subject can, under appropriate conditions, be achieved by up to 95 percent of the students in a class" (p.46).

Gagne (1974) contends that "Educational technology. . .namely a body of technical knowledge about the systematic design and conduct of education, based upon scientific research", can best be used to improve learning if the "learning outcomes–of learned capabilities–which can be identified in any subjects of the curriculum" (p.3) are appropriately matched, and "that different media do indeed have different potentialities for instruction, when the latter is conceived as a set of events that support learning processes" (p.8).

Matching the "things of learning" or "objectives" with various "media" or "instructional processes" for increasing the probability of learning for both teachers and their pupils is a fundamental assumption of the CTM Project.

SYSTEMS

An instructional system provides for the translation of a conceptual model into an operationalized plan of outcomes, processes, and products. A systems approach (Banathy, 1968) provides management information as to the orderly "interacting components" among its critical elements. The use of a systems approach for the design of teacher education programs characterized the ten Elementary Education Models Program supported by the U.S. Office of Education as a major national effort.

In a comprehensive description and specification of the products of this effort, Boerrigter (1970) highlighted these new conceptualizations, systematic planning and feasibility testing of prototype models, and strategies for improving and restructuring teacher education.

> This project has introduced educational models, systems analysis, and learning systems techniques into the resolution of problems facing teacher training. (p.4)

Haring (1970) described "the application of a systems analysis. . .a more precise set of procedures" for the field of special education.

> These programs are systems or processes of instruction, which embrace terminal objectives, a program of instruction, measurement, and evaluation of the achievement of objectives. (p.29)

Clarke's (1971) analysis and synthesis of the ten Elementary Education Models focused on their conceptual framework, elements, and the "micro" and "macro" evaluation research strategies employed.

> An analysis of the elements found in the various designs for the programs of teacher education cited previously is a formidable task. Teaching is a complex activity, and teacher education is likely to be even more complex. It has a time sequence, is a process, has a structure and organization, is set in a context, and so on. (p. 120)
>
> Research on teacher education programs can be micro research or macro research. The latter could be on large groupings of elements such as the previously cited categories of the teaching task developed by the Florida Model: formulating objectives, selecting and organizing content, employing appropriate strategies, evaluating learning outcomes, and accepting leadership and professional responsibilities. (p. 149)

The "Florida State University Model for the Preparation of Elementary School Teachers" (Dodl, 1969), provided the *processes* for specifying the competencies in the CTM Project. The process *elements,* including the emphasis on "macro" research, offered a compatible vehicle or system for the conceptualizations of "clinical teaching," i.e., the content or outcomes for exceptional children and their teachers. In addition, the Florida Elementary Model provided the developing CTM Project with the technology of performance-based teacher education (PBTE) and computer-managed instruction (CMI) as potentially viable components for specifying and managing the data requirements for evaluation activities.

PERFORMANCE-BASED TEACHER EDUCATION

Today, PBTE continues the historical attempt to define and specify teacher competencies in teacher education programs as well as providing a clearer basis for studying their relationship to student achievement (Gagne, 1970; Rosenshine and Furst, 1971). Although the PBTE model does not prescribe "what is to be taught," the "generic, essential elements" and their criteria (Elam, 1971, pp. 6-7) require that teacher education programs define explicit teacher competencies or teaching behaviors in relation to student growth. Performance of these competencies or cluster of teacher skills must be demonstrated in an interactive "clinical" or school setting as evidence of mastery (Turner, 1972; Houston and Howsam, 1972; Schmieder, 1973; Cooper, Weber, and Johnson, 1973; Weber, Cooper and Houston, 1973; and DeVault, Anderson, and Dickson, 1973).

Although PBTE programs may be found in "packaged," self-contained materials, and unquestionably some content may best be presented in a prescriptive mode, the authors of the CTM Project strongly believe in a personalized, interactive, and responsive teacher-student relationship. All the teacher competencies available cannot possibly be identified, specified, prepared, or measured. The major teaching competencies, however, specify individualized instruction for unique individual learners, although facilitated by PBTE, modules, and other packages of instruction. The CTM provides for a personalized and individualized teacher-student interaction in the actual "clinical" school environment.

COMPUTER-MANAGED INSTRUCTION

Computer assisted instruction (CAI) or computer managed instruction (CMI) is a recent additional element available for assisting individual learning and managing pupil and curriculum performance. Baker's (1971) comprehensive review of CMI highlighted the apparent shift away from using the computer to *assist* "programmed instruction" to the *management* of "individualized instruction." Commenting on the variations in instructional materials, rate of learning, and learning problems, Baker described the changing role of the teacher in such a program of individualized instruction:

> In the center of this milieu is the classroom teacher who somehow must regulate this activity, diagnose each child's difficulties, and prescribe his activities for some future period of time. (p.52)

Several CMI systems were described[1] having in common "units of instruction . . .specified in terms of educational objectives. . ." and the "basic pattern of pretest, diagnosis, prescription, and post test . . . repeated for each unit of instruction" (pp. 52-54). Among the various systems reviewed, Baker noted that the emphasis on "diagnostic and prescriptive procedures" required considerable study of the "theoretical and applied nature" of the CMI systems before these developments could be documented as effective. Summarizing the "state of the art" Baker offered an optimistic outlook for the potential of this technology in supporting individualized instruction.

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[1] Systems Development Corporation (Silberman, 1968); Pittsburgh Learning Research and Development Center, IRI (Glaser, 1968); American Institute for Research, Project PLAN (Flanagan, 1969); University of Wisconsin (Kelley, 1968) and the Individualized Mathematics Curriculum Project, (DeVault, et.al. 1969); Stanford CAI Project (Jerman, 1969).

> Computer-based instructional management systems could also have a profound effect on the role of the teacher and on teacher training. Computer programs could embody the best available professional judgment regarding diagnosis and prescription in the subject matter areas, thus providing the teacher with a highly competent assistant to make routine instructional decisions. (pp.67-68)

Dick and Gallagher (1972) described a CMI system whereby the student "will achieve his maximum performance level by interacting *directly* with the computer in order to evaluate his learning experience" (p.33). Differing from existing CMI procedures, Dick and Gallagher designed, implemented, and evaluated their system for a graduate course based upon numerous research studies conducted at the CAI Center at Florida State University (Hansen, Dick, and Lippert, 1969). "Formative evaluation of the course" indicated no significant difference for this instructional treatment; however, positive student attitudes towards the CMI organization of the course was a significant finding. Cost effectiveness was perhaps the most significant feature of CMI revealed in this study. The researchers found that the cost of this mode of instruction "is one-half to one-third the cost of conventional graduate instruction at Florida State" (p.38).

Cartwright and Hall (1974) described "the application of computers with handicapped children or in special education . . . directly . . . [or] . . . . on behalf of handicapped children. . . CAI, CMI, information-retrieval systems, data management, computer-assisted testing and diagnosis, and research applications" (p. 312) were used with the "deaf," "blind," "emotionally disturbed," "mentally retarded," "culturally disadvantaged," and "gifted." The Florida State University Clinical Teacher Model CMI system "which monitors both the performance-based teacher education curriculum as well as the academic behaviors in the exceptional children sequences" (pp. 324-325) was illustrated.

The "widespread application of the computer in special education" for "data management" and for a variety of other functions, although encouraging and promising of future potential for the handicapped, was summarized by Cartwright and Hall as offering "little evaluation in available studies" (p.337) and they noted that "software development was badly needed" (p.338).

EVALUATION RESEARCH IN EDUCATION

Evaluation of an innovative, individualized teacher education model required an approach, design, and procedures congruent with the purposes and objectives of the overall CTM Project and appropriate for the teaching and learning process being studied. The distinctions and relationships between research and evaluation offered a viable conceptual and pragmatic approach to the design, field-testing, and assessment of an individualized instructional system in actual college and local school settings. *Formative* and *summative* evaluation activities necessary for the establishment and evaluation of the CTM Project, i.e., forecasting, needs assessment, task analysis, design of instructional objectives, specifications, instructional resources, and criterion measures were representative of the "state of the art" at the time.

Accountability in education, regardless of whether a cause, effect, or emerging sophistication, requires evaluation information on innovative programs. All the partners in the educational establishment, i.e., supporters, investigators, and consumers, deserve objective evaluation information as to the performance effectiveness and impact of the innovation.

This section reviews the theoretical and research literature related to the evaluational model, design, and procedures utilized in the CTM Project. Following the articulation between research and evaluation of individualized instructional programs, the emphasis shifts to the conceptual and pragmatic issues confronting evaluation research in actual school environments. Design, methodological, and measurement problems are synthesized as the foundation for understanding the evaluation research activities conducted in this Project.

EVALUATION OF INDIVIDUALIZED INSTRUCTION

Historical and contemporary efforts of research and evaluation of individualized instructional programs have been described in various yearbooks of the National Society for the Study of Education since its initial publication in 1902. *The Measurement of Educational Products (1918);* Whipple (1925), *Adapting the Schools to Individual Differences;* Henry (1962), *Individualizing Instruction;* and Tyler (1969), *Educational Evaluation: New Roles, New Means,* contain numerous accounts of the continuing attempt to provide for the range of individual differences through individualized instruction in our public schools and to assess the efficacy of this strategy.

Illustrative of the well known individualized instructional programs containing systematic evaluation procedures are the Winnetka Plan, Individually Prescribed Instruction Project (IPI), and Project PLAN. These three programs contain the elements of specified objectives, mastery measurement, monitoring and managing of performance, and careful attention to early and on-going evaluation activities. Comprehensive reviews of these and other individualized instructional programs were presented by Baker (1971).

Lindvall and Cox (1969) highlight Washburne's Winnetka Plan and the Individually Prescribed Instruction Project (IPI) as classic illustrations of carefully evaluated pupil variables and growth in instruction.

> Historically, probably the classic program for individualizing instruction was the Winnetka Plan. Most modern programs acknowledge their debt to Burk and Washburne and their associates. In brief, the Winnetka Plan was a procedure for the individualization of instruction involving carefully specified sequences of instructional objectives, tests to determine pupil mastery of these objectives, instructional materials for use in achieving each objective, a procedure for developing individual lesson plans, and a procedure for monitoring pupil progression through the curriculum. The program called for each pupil to work through the sequences of objectives at his own rate and largely on an independent basis.
>
> In the Winnetka Plan each child had a goal book in which was recorded the date on which he passed each test of a sequence. This provided both the teacher and the pupil with readily available data concerning the pupil's progress. (p. 158)

Although variations of this pattern of individualized instruction have emerged during the past half century, this type of "structured-curriculum model" has persistently continued to reappear in public schools and is identifiable by the following elements:

1. Sequences of instructional objectives to define the curriculum
2. Instructional materials to teach each objective
3. An evaluation procedure for placing each pupil at the appropriate point in the curriculum
4. A plan for developing individualized programs of study
5. A procedure for evaluating and monitoring individual progress. (Lindvall and Cox, 1969, p. 161)

Obviously, not all of the outcomes of a total program are specified; however, the "systematic" "sequences of instructional objectives" in a "hierarchical ordering across levels" are signal procedures in the design, conduct, and evaluation of individualized instructional programs.

In the IPI Project, evaluation procedures were employed for both "monitoring of individual progress" and "the improvement of individualized programs." Diagnostic and performance measures of individual pupil progress on "curriculum-embedded tests" are major elements in striving for the on-going improvement of individualized instructional programs. Normative tests and criterion referenced measures were used to "provide a general profile of individual pupil performance" as well as for "placement tests . . . referenced to the sequences of instructional objectives" (Lindvall and Cox, 1969, p. 169).

Flanagan (1969) described Project PLAN, emerging out of the earlier evaluation studies for improving instruction, and designed for "correcting some of the present major deficiencies of the American educational system" (pp. 235-236). Generating goals and objectives that "clearly focus on the needs and development of the individual as a unique person" (p.236), Flanagan designed a system of instruction that offered "measures of the student's progress in terms of placement tests, tests for particular units, and survey tests on objectives related to several units" (p. 239). The additional elements or "subsystems" provided measurable evidence of the effectiveness of the teacher. In addition, a computer managed instructional (CMI) component made available "information about both the individuals and the materials in the program in such a way that they can be readily matched to facilitate the immediate and long-range planning of the educational development of each individual" (p. 239).

The early inclusion of evaluation procedures in Project PLAN increased the probability of producing a successful innovation for improving instruction. Clearly stated objectives, each containing criteria and measures for both "formative" and "summative" evaluation, marked the operational and assessment aspects of the Project.

Flanagan believed that an individualized instructional program should be judged on the basis of its intended outcomes.

> Although means or other average measures of achievement often represent useful summary measures, it is of great importance that the ultimate evaluation of the educational program be in terms of how well it is fulfilling the needs of specific individuals. (p. 241)

EVALUATION MODELS

The distinctions and similarities between *research* and *evaluation* of instruction have become increasingly clear during the past decade. Gage and Unruh (1967) described "the new paradigms that are the precursors of fruitful revolutions in science" (p. 358). They stated that the difference between "approaches to research on teaching is that between describing, or concern with the way teaching is, and improving, or concern with the way teaching ought to be" (p. 359). Gage and Unruh cited the need for a "synthesis" of current theories of learning, teaching, and research paradigms into an "improved individualization" and study of the relationships among aptitude-treatment interactions (p. 367).

Similarly, the fundamental differences between research and evaluation, i.e., determining *truth* or *value*, appeared to be merging towards more relevant and appropriate "quasi-experimental designs" for the study of educational effects in realistic school environments (Campbell and Stanley, 1963). Cronbach (1963) described evaluation for improving instruction as a procedure for gathering and analyzing data for "decision making" purposes. Stake (1967) emphasized both "description and judgment" if "the educational program" is "to be fully understood" (p. 526). Scriven (1967) used the terms "formative evaluation" for the methods used during the development of a curriculum and "summative evaluation" as descriptive statements of the value of the program. Furthermore, Scriven used the term *formative* regarding curriculum material that was not as yet ready for dissemination and *summative* to mean materials containing criteria and standards ready for consumer and teacher use.

Sullivan (1969) interpreted Scriven's use of these terms by describing the results of evaluation.

> The product of formative evaluation activities is expected to be an improved instructional program, while the product of summative evaluation is normally a set of descriptive statements about the efficacy of a single program or the relative merits of two or more programs. (p. 81)

Evaluation studies of national programs, i.e., Head Start and Follow Through, performance contracting, and state assessment programs in Pennsylvania, Michigan, and Florida, describe *system-wide* evaluation efforts. Comprehensive text books on the philosophy, models, and designs of evaluation were presented by Suchman (1967), Tyler (1969), Rippey (1973), and others.

A comprehensive "state of the art" presentation of *formative* and *summative* evaluation activities by Bloom, Hastings, and Madaus (1971) offered numerous accounts of developmental and decision making uses of this strategy in various educational fields.

In the field of special education, Proger (1971) reviewed *formative* and *summative* or *process* and *product* "program evaluation models" describing the essential "steps in program evaluation designs." Illustrating Stufflebeam's (1967) system of "Context, Input, Process, and Product," Proger detailed the fundamental steps of this evaluation model as "generalized guidelines" commonly found in program evaluation projects. *Context* referred to the needs assessment of target populations as the basis for generating program goals and specifying behavioral objectives. *Input* or design activities consisted of establishing the training program for attaining the goals and objectives of the project. Included in this element was the "specification of the actual steps to be used in the training program finally selected, and the specification of a design for gathering evidence of effectiveness" (p.295). *Process* or field-testing the "pilot" or prototype training program provides information for the "restructure of the final program" as well as an "in-process quality-control monitoring" of instruction. *Product evaluation* is determining the "effectiveness at the *end* of the training program" (p.295). The *product evaluation* information provides decision making data for subsequent users of the program.

Critical of the "ever-increasing tide of general program evaluation models" (p.296), Proger (1971) urged researchers in the field to "assess the relevance and success of this build-a-model marathon" (p.296). Citing the lack of systematic evaluation "implementation in any area of exceptionality," Proger urged a shift towards "gain data on individual pupils" and "comparative" program assessment of the differing instructional strategies used to attain similar goals. Proger suggested "evaluation consultation" and "program evaluation centers" for improving program evaluation in special education in order to overcome "this sorry state of the art."

> A second major cause for lack of widespread implementation of program evaluation has been the absence of an aggressive "sales campaign" by existing agencies: county offices or intermediate units, regional materials and/or resource centers, universities, and state departments of education. Educators are traditionally slow to adopt innovations. Thus, some vigorous prodding is needed. Existing agencies that have program evaluation consultation capabilities must assume the responsibility to keep knocking on the doors of potential clients. Simple advertising of the availability of these services is not enough. (p.298)

Lilly (1973) similarly deplored the "plethora of such models containing slight to relatively major variations on a theme" (p.218) and echoed Proger's earlier concern over the "numerous model builders but no one implementing the models" (p.219). Highlighting the "common emphasis in program-evaluation models is the specification of objectives, processes, and outcomes and the determination of relationships between these three elements" (p.218). Lilly re-emphasized "the basic purpose of evaluation: to provide decision makers with data which have a direct bearing on decisions they must make" (p.219).

> In summary, a case has been made for differentiation between research and evaluation, and for an emphasis on practical application of already-developed evaluation models. What is needed at the present time is not further evaluation models, but rather specific evaluation plans to apply existing models to specific projects. It can be expected that no two evaluation plans will be exactly the same, since an evaluator is unlikely to encounter identical political and personal situations in different projects, even if located in the same setting. The present need is for evaluation practitioners; educational researchers have some unique qualifications for this role, providing that the experimental approach of asking and answering questions can be left behind, or at least temporarily put aside. (pp. 219-220)

In a critical review of "research on the utility of development and evaluation models," Smith and Murray (1975) recognized the varying and often "competing conceptualizations of appropriate evaluation procedures" based upon "differing assumptions and values concerning the evaluation process itself" (p.13). Indicating the lack of research support for the validity and utility of existing evaluation models and procedures, Smith and Murray suggested careful attention to the *purposes* of these paradigms in selecting among the available strategies.

> The criteria for good development and evaluation models then lie not only in their utility in providing the most technically sound products, but in their utility for monitoring and guiding the development process itself as well. (p.16)

DESIGN, METHODOLOGICAL AND CRITERION PROBLEMS

The debate between *valid* evaluation models and procedures is in essence related to the distinction between research and evaluation. The demand for validity, reliability, and utility is certainly the hallmark of science. However, the scientific study of teaching and learning in school settings (as distinctly different from research in laboratories) has produced alternative designs and methodologies to those traditionally available to investigators in the social or educational fields.

The problems encountered by educational researchers attempting to randomly assign "experimental" and "control" groups to "treatments" have been abundantly documented. The lack of *efficacy* of existing instructional and research practices has led to either the abandonment of promising "innovations" or the frustrating search for improved research designs and methodologies. As new "quasi-experimental" procedures were suggested, compromises resulted between experimental laboratory research and evaluation studies in schools. Furthermore, evaluation research paradigms varied for system-wide programs, for specific programs, for studies of individuals and for the effects of treatment and their interactions.

A basic assumption of our public educational system is that the teacher causes or facilitates learning gains in the pupil. Accordingly, teacher education programs have assumed the role of training teachers to perform those behaviors believed to enhance or produce learning gains.

Although considerable research has been generated concerning teaching strategies and pupil performance, studies which attempt to determine a causal relationship between them have produced conflicting results that allow no definitive conclusions (Gage 1963, and Rosenshine, 1971).

A large portion of the inconsistency can be attributed to the methodological problems which are encountered when analyzing teaching strategies and pupil performance (Rosenshine, 1971; Gall, 1973). An adequate methodology must effectively handle three aspects of the research question: (1) measurement of the teacher's behavior, (2) measurement of pupil performance and achievement, and (3) development of a methodology capable of showing relationships that may exist between teacher behavior and pupil performance (Gall, 1973; Potter, 1973; Turner, 1972). Studies that fail to give adequate consideration to any of these critical design elements may draw unjustifiable conclusions, either positive or negative.

The measurement of teacher behavior is essentially a two-fold assessment problem: (1) it must be determined that the teacher has acquired the competency, and (2) it must be determined that the acquired competency is actually being employed in the classroom (Potter, 1973; Turner, 1972). Assessment procedures are contingent upon operational definitions of the competencies to be examined (Baer et al., 1968). Too often vague, global competencies are utilized which are impossible to define operationally. Furthermore, insufficient controls are employed over other variables to ensure that the resulting gain in pupil achievement is a consequence of the teacher competency being studied instead of another competency that is enacted simultaneously (Baer et al., 1968). Another contaminant of research findings can be located in studies involving the application of a single treatment to an entire group. Any interactions which may be operating may be masked through the averaging of achievement (Guralnick, 1973).

Adequate measurement of pupil performance is dependent upon a rigorous definition of student achievement or pupil behavior. Gall (1973) criticized Rosenshine and Furst (1971) for their inadequate definition of student achievement that results in unjustified conclusions. Most studies in this field define student behavior in terms of performance on standardized achievement tests. Gall (1973) suggested that the chief hazard to be avoided in employing achievement tests to measure student gains related to teacher performance is the lack of consistency between the curriculum content measured by the test and the content taught by the teacher. Tests with demonstrated validity for their designed purpose may not provide a valid measure of pupil achievement relative to the specific performance objectives identified for a given research study (Glaser, 1968; Gall, 1973). High content validity is stated as being absolutely critical in order for a research project on teacher effectiveness to generate meaningful data (Gall, 1973).

Gagne (1970) refers to standardized achievement tests as correlated measures of pupil behavior and discusses the difficulties involved in interpreting results of studies in which they are used. In particular, Gagne suggests that such tests possess many of the characteristics of intelligence tests and are not valid as direct output measures. He calls for studies which employ direct proximal or criterion output measures instead of correlational measures to ascertain student performance. Such proximal measures are commonly referred to as criterion-referenced tests.

Other criticisms of standardized achievement measures include their insensitivity to significant gains in studies of short duration. In addition, if a standardized achievement battery is used, the analyzed relationship may be that between teacher behaviors and student aptitude instead of performance (Anastasi, 1968).

Other problems associated with pupil performance assessment include the operation of statistical regression, where groups have been selected on the basis of their extreme scores (Campbell and Stanley, 1963); and the artificial restriction of the range of gain scores when the test is not appropriate for the aptitude level required to make inferences about the relationship between specific teacher competencies and pupil behavior. First, it must be determined that the teacher has in fact acquired the competencies being studied. Evidence of such acquisition can be provided through assessment techniques similar to those described by Turner (1972) at Criterion Levels Three through Six. In addition, it must be established through observation or other methods that the competencies were actually employed at the time required for influencing pupil behavior. Such substantiation is contingent upon operational definitions of the competencies being examined. In operationalizing the competencies, Baer et al. (1968) recommend detailed procedural descriptions covering various contingencies that may be encountered.

Recent interest in performance-based teacher education has emphasized the need for improved procedures for measuring teacher behavior. Turner (1972) recently proposed six Levels of Criteria which may be used to assess the performance of teachers. They are:

Criterion Level 1 – teacher demonstrates his ability to change pupil behavior over a long time period (one to two years) under actual classroom conditions as measured by pupil performance.

Criterion Level 2 – teacher demonstrates his ability to change pupil behavior in a relatively short time period (one to two weeks) under actual classroom conditions as measured by pupil performance.

Criterion Level 3 – teacher demonstrates his ability to perform many competencies in a general teaching context as judged by observation of his behavior.

Criterion Level 4 – teacher demonstrates his ability to perform several skills or behaviors in a micro-teaching context involving real students.

Criterion Level 5 – teacher demonstrates his ability to produce or show in his behavior at least one teaching skill, e.g., testing.

Criterion Level 6 – teacher demonstrates that he understands some behavior, concept, or principle germane to teaching.

Turner suggests that the ability of a teacher to produce change in pupil behavior is the ultimate test of the teacher's competency (Levels 1 and 2). While individual pupil performance may provide adequate evidence of the teacher's overall capabilities, other evidence is of the entire class (Gall, 1973). A thorough treatment of the relationship between regression artifacts and the use of matching, gain scores, analysis of covariance, and partial correlation is presented by Campbell and Erlebacher (1970).

The final consideration for improving research in teaching effectiveness concerns the urgent need for a methodology that is capable of demonstrating a relationship between teacher behavior and pupil performance. Many previous studies have utilized research designs involving correlational methods and/or group comparisons.

Most of the correlational research is of the type identified by Gall (1973) as "empirical-exploratory" and characterized by lack of theoretical guidance or explicit rationale. The results of such studies often cannot be replicated because of the occurrence of chance relationships in large correlation matrices. Guralnick (1973) also pointed to the confusion that occurs in the interpretation of correlational data as a result of the excessive number of variables operating in educational programs. Even correlational research of the "hypothesis-testing" variety (Gall, 1973) may be of little value because of the instruments used to measure the variables. Gagne (1970) perceives the credibility of such investigations as very low and draws practically no conclusions from them.

The other approach commonly employed in research in teaching effectiveness involves the utilization of control group designs in comparative studies. The data analysis techniques employed with such designs generally are based on an analysis of variance utilizing data from norm-referenced measures which are subject to the previously mentioned limitations. Furthermore, group comparison studies are impeded by within-group variability which may mask treatment effects. The failure of many ATI studies (Cronbach and Snow, 1969) to show significant differences may be influenced by the averaging of treatment gains in comparison to controls or other treatments. Light and Smith (1970) argue that the variability within a treatment may be equally as important as the average, because a given program may be effective for only a limited segment of the treatment population.

In addition to the foregoing considerations, many group comparison studies are subject to further limitations because of the difficulty in establishing pre-experimental sampling equivalence of the groups in naturally occurring educational settings. Ultimately, the relationship between teacher behavior and pupil performance must be demonstrated in the classroom (Baer et al., 1968). However, the experimental control of relevant variables in the classroom situation is extremely difficult. Randomization procedures for establishing equivalent control groups rarely can be employed since subjects are often selected because of their identified need for treatment. Withholding treatment from certain subjects is often morally and socially unjustified, thus eliminating the availability of appropriate controls.

Campbell and Stanley (1963) discussed at length the possibility of an interaction between selection and maturation affecting internal validity in nonequivalent control group designs. Another source of internal validity problems in this design is the effect of regression. If either the control or experimental group has been chosen on the basis of its extreme scores, the pretest-posttest gains may well be a product of regression rather than the effect of the treatment.

The problems associated with efforts to use laboratory research methods in applied settings are extensive.

EVALUATION RATIONALE

Useful research on teaching to study the "effects of treatment" requires generalizable and replicable documentation of a planned, specified instructional treatment, which describes the relationship between teacher behavior and learner achievement in an actual classroom environment. Changing conceptual and procedural theories and practices in research on instruction during the past twenty years have generated alternative evaluative strategies for improving education. Educational technology has provided researchers and practitioners with sophisticated, systematic, and measurable procedures for describing and analyzing complex teaching and learning outcomes, processes, and products in the classroom. Evaluation research in education, a contemporary strategy for improving instruction by providing decision making data on alternative and changing practices, offers a process for the development of viable documented theories or models of teaching and learning.

The approach utilized in the establishment and evaluation of the Clinical Teacher Model was based upon the assumption that the new conceptualized outcomes regarding *generic* teacher competencies and *common* desired pupil behaviors required compatible alternative instructional procedures and an evaluation research model appropriate to the problem studied. Although cognizant of the "methodological inadequacies" of prior efforts at defining and documenting the "good teacher," the Clinical Teacher Model Project embarked on its uncharted alternative venture in teaching and learning by employing newly emerging evaluation research strategies.

Armed with an appreciation of the historical efforts at defining the "good teacher" (Gage, 1963), the views of contemporary advocates urging new curriculum designs (Bruner, 1966), and conceptual models and methodologies for research on teaching (Travers, 1973), the Clinical Teacher Model Project attempted to continue this tradition by integrating promising alternative research strategies offered by both "regular" and "special" educators.

The Project staff was committed to the position that advocates of change in education are required to clearly specify, field-test, and document the improved training model *prior* to dissemination and diffusion activities. Accordingly, an evaluation plan was initially proposed and supported as a critical and ongoing component of the outcomes and procedures projected. Evaluation strategies provided content specialists with the techniques for precisely specifying and measuring desired outcomes. Specific design constructs and their characteristics which formed the basis for the procedures utilized in this study are reviewed.

Morrisett (1966) outlined the following approach to curriculum development:

> Instructional research is best developed cooperatively among the social scientist, curriculum builder, and teacher. Attention to

> evaluation, among other research goals, at the beginning of a project can help clarify and make explicit educational assumptions. These, in turn, provide grist for a theory of instruction. Also, it becomes apparent that means of curriculum criticism must be devised to provide feedback to the work (p. 125).

Bruner (1966) identified the major ingredients for the curriculum design and evaluation team.

> The ingredients are fairly obvious. For one thing, the curriculum builder needs detailed information as soon as possible concerning the comprehensibility of his material, the extent to which it produces activation in pupils, what kinds of blocks to comprehension are developing, how well the material transfers, etc. All of this needs to be related to particular pieces of curriculum—a particular topic or exercise or demonstration or set of paragraphs in a book or manual. This means, in effect, that the curriculum builder needs a try-out teacher working with him and also a psychologist who can observe and test in detail with respect to agreed-upon objectives. The teacher must be well enough trained and acquainted with the objectives of the curriculum project to change pace, re-present material, and make possible new observations by the psychologist. The working core, then, includes a curriculum specialist (with as deep a knowledge as possible of the particular subject matter), an experimental teacher, and a psychologist trained in close observational techniques for the study of problem solving techniques, that are closer to the tradition of Piaget than to psychometric test construction. (p. 133)

Further specifications for the curriculum-evaluation team were enumerated to include input from the consumer or marketplace.

> For major evaluation activities it is obvious that an individual evaluator will not have the many competencies required. A team of social scientists is needed for many assignments. It is reasonable to suppose that such teams will include specialists in instructional technology, specialists in psychometric testing and scaling, specialists in research design and analysis, and specialists in dissemination of information. Curriculum innovation is sure to have deep and widespread effect on our society, and we may include the social anthropologist on some evaluation teams. The economist and philosopher have something to offer. Experts will be needed for the study of values, population surveys, and content-oriented data-reduction techniques (Stake, 1967, p.339).

The team approach to curriculum research and evaluation as well as improved methods of studying education in school settings were stressed in the special education areas of learning disabilities, emotionally disturbed, and mental retardation.

In the area of learning disabilities, Chalfant and Scheffelin (1969) urged the adoption of "program evaluation studies. . .to provide information about the effectiveness, efficiency, and appropriateness of different administrative approaches. . ." in order to "have potential impact on policy, procedures, and legislation. This kind of research approach may be termed 'action research' " (p.145). According to Chalfant and Scheffelin:

> Another problem area that needs to be investigated is that of teacher preparation. It would be helpful if professionals from different disciplines would sit down together and conduct an objective, impersonal task analysis of the specific sub-tasks which are necessary to provide needed services. Knowing the specific tasks which need to be accomplished will make it possible to estimate the minimal amount of training necessary to accomplish each task. This information will give universities and school systems an objective basis for establishing training programs which can train larger numbers of personnel in as brief a time period as possible.
>
> The eventual outcome of this approach may be a gradual restructuring of professional roles which will hopefully provide great efficiency in the effective use of personnel in our schools. It is important, therefore, that our schools maintain sufficient flexibility to field test the effectiveness of personnel who have been trained in innovative programs. This may require school districts to create new and innovative job positions in order to evaluate the effectiveness of a particular service. (p.145)

Chalfant and Scheffelin identified needed research on current teacher preparation programs ranging from the Bachelor's level person working under the supervision of "a sixth year. . .diagnostic teacher," to the "doctoral level. . .prepared for teacher training, research, and leadership roles in service agencies." Changing patterns of special educational services and the differentiated staffing requirements resulting from these developments must be constantly fed back to the universities for pre-service and in-service refinements, and in some instances major modifications, of teacher preparation curricula.

> There is need, also, to develop more precise descriptions of teaching procedures. One of the major problems in remediation is that it is very difficult to describe what goes on during the teaching process. We have to have accurate descriptions of teaching procedures so that teachers can replicate teaching procedures. Thorough reporting should include a description of the tasks which are presented in terms of stimulus input, information about

> the subject, and a quantitative and qualitative description of the responses. (p.144)

Hewett and Blake (1973) summarized twenty years of research on the education of the emotionally disturbed. While stressing the "methodological inadequacies," they offered suggestions for further consideration:

> It can be stated that research evidence must be obtained in almost every phase of education of the disturbed child starting with the critical area of definition and classification mentioned earlier. The list of methodological inadequacies reflected in research efforts in the field is considerable. Balow (1966) calls attention to inadequate criterion measures, lack of control groups, inadequate sampling, poorly defined differential treatments and retrospective designs. He also emphasizes the importance of research questions which will lend themselves to generalized results rather than to specific group or individual implications. Finally, there is an urgent need for planned, programmatic research which is cumulative and which moves systematically toward building a body of knowledge in the field. (p.681)

Blatt and Garfunkel (1973) concluded their comprehensive review of the research literature on the education of the mentally retarded with a plea for moving from the quantitative efficacy studies towards efforts "to study children and how they change in different educational environments" (p. 650). Suggesting a major conceptual departure from "methodological concerns to those involving human interactions," Blatt and Garfunkel recommend as a first step, "that before we can adequately measure and understand differences in children and their teachers, we will first have to deal with and understand differences and processes" (p. 651).

> Our concern is with the extent to which traditional models have determined the kind of research that is being conducted rather than, conversely, models determined by the nature of problems studied. Further, we are concerned that such traditional research models also determine the kinds of independent variables that are selected for study and influence the scaling of independent variations. To state this another way, researchers are confronted by problems connected with the assignment of children to treatments and, to further complicate this, of teachers to treatments. . .
>
> Therefore, when one designs an experiment that includes children (who vary) and teachers and, possibly, some other adults (who vary) in classrooms, the notion of homogenity of variance that assumes there is similarity in the way a treatment occurs in different classes with different teachers and different children is questionable. (p.633)

> This is another way of saying that the independent variables which *should* be given most attention in such settings — teachers, children, and their interactions — *have not been* subjected to careful measurement and control. (p.634)

In the same *Second Handbook of Research on Teaching* (Travers, 1973) Snow (1973) reviewed the conceptual shifts that are occurring in research on teaching. Snow states that "Diversity of approach should increase the likelihood of theoretical advance" (p.99), and comments that whatever the choice in "theories or methodologies" they must be made "explicit." As an initial step in theory or model construction, Snow suggested "metaphor making" or an "image game" as "one basis for more theoretical constructions."

> In its simplest form, a theory is a symbolic construction designed to bring generalizable facts (or laws) into systematic connection. It consists of (a) a set of units (facts, concepts, variables) and (b) a system of relationships among the units. These are defined and interpreted in statements that are understandable to others and that make predictions about empirical events. (p.78)
>
> In the present context, it seems most useful to consider models as well-developed descriptive analogies used to help visualize, often in a simplified or miniature way, phenomena that cannot be easily or directly observed. Each model is thus a projection of a possible system of relationships among phenomena, realized in verbal, material, graphic or symbolic terms. (p.81)
>
> . . .modeling thus provides a versatile tool for theory construction. (p.82)

Translating the theoretical or methaphor building process into an operational model for system development, testing, and documentation, Snow continued:

> The metaphor captures key aspects of the phenomena of interest for the theoretician. It succinctly may schematize important insights into data and provides apt labels for these patterns of observation. It frequently overgeneralizes and is easily criticized because other persons, when told the metaphor, are likely to focus on irrelevant aspects until the theoretician's insight is explained to them. (p.89)
>
> The metaphor becomes a model when such distinctive features are coded as components of a more formal system. (p.90)
>
> Models are assembled and modified gradually through continuous interaction with ongoing observation and data analysis. (p.97)

Blatt and Garfunkel (1973) recognized the inherent difficulties in dealing with the variety of "variables in the usual educational situation," and rather than "discourage the rigorous experimentalist from dealing with them," proposed the use of "research strategies that are in harmony with discovering and evaluating what actually occurs in classrooms" (pp. 635-636).

> Our research preference is to study children and how they change in different educational environments. We believe it is more defensible, and will make a greater difference, to generalize about children interacting with each other and with adults in situations than it is to generalize about procedures. It is from evaluations of varieties of methods, with varieties of children in more or less formal and informal settings, utilizing teachers with heterogeneous backgrounds, that hypotheses will be generated that will lead to viable theories concerning human development and learning. It appears to us that, in this kind of strategy, theory construction shifts from methodological concerns to those involving human interactions. (p.650)

The study of "human interactions" in the classroom, as the focus for designing strategies of research in education, requires problem selection, researchable questions, and appropriate procedures.

The problems confronting teacher education accreditation agencies also dramatically presented the need for practical application of this research strategy. The Council for Exceptional Children's "Professional Standards/Guidelines Project" (Lindsey, 1974), posed several "complicating factors peculiar to accreditation in teacher education" (p.33) that would appear amenable for solution by the strategies suggested by Blatt and Garfunkel (1973) and Snow (1973).

> Far more important problems are recognized now, however. They can be classified into three large categories: (1) evidence and relationships, (2) parity and power, and (3) competence and expertise. The first category can be summarized this way:
>
> Selection and retention of students → Teacher education program → Teacher behavior → Pupil outcome
>
> What evidence indicates relationships between:

classroom teacher behavior	and	pupil outcome?
preparation programs	and	teacher behavior?
students admitted and retained	and	success in program teacher behavior pupil outcome?

> If valid and reliable data were available on these relationships, the task of developing standards and gathering and evaluating data on programs and their graduates would cease to be the almost impossible task that it seems to be at present. (Lindsey, 1974 pp.34-35)

The problem of determining "relationships between classroom teacher behavior and pupil outcome" and "preparation programs" is a fundamental issue addressed by the Clinical Teacher Model Project. Providing documentation of the effectiveness of this "model" was the purpose in selecting an evaluation research design for generating "evidence" for the profession.

As Snow (1973) warned:

> Many theories die, not because of any demonstrated lack of merit, but because even their creators failed to pursue their ideas with continued research to show their value. (p.108)

EVALUATION DESIGN

The formative and summative evaluation designs selected by the CTM Project, early in 1969 during the planning stages of the prototype instructional system, represented an attempt to provide an accountable assessment procedure for determining the *value* of an alternative curriculum model. Formative evaluation models were required to structure initial activities for specifying, monitoring, and assessing each element of the instructional system, and for describing unanticipated problems and benefits of the innovation. Summative evaluation designs were selected which have the capability for providing data and documentation of the general effectiveness of the entire instructional system on the target population of exceptional children.

Scriven (1967) articulated the difference between formative and summative evaluation purposes, context, criteria, and outcomes. Formative evaluation provides the curriculum designer with data for determining and judging if the innovation works and what revisions may be needed to improve this developing instructional system. Summative evaluation assesses the overall effect of the curriculum, materials, or program on the learners. Concern for the effects of treatment (curriculum) is an essential evaluation problem.

Formative Evaluation

The Sixty-eighth Yearbook of the National Society for the Study of Education, *Educational Evaluation: New Roles, New Means* (1969) presented a comprehensive description of the state of the art. Several references have been selected as particularly relevant to the formative evaluation activities conducted in the CTM Project.

Bloom (1969) indicated the need for "specifications" of "the desired outcomes of learning" as the initial procedure in evaluation. If these outcomes or objectives can be "sufficiently explicit . . . they can be used to communicate what is desired to other teachers, curriculum-workers, educational technologists, and evaluators" (p.33). Furthermore, curriculum developers need these explicit specifications, for they "define the problems they must solve in the construction of instructional materials or evaluation instruments, and such specifications provide the criteria against which the materials and instruments are validated" (p.28). Although realizing that "social pressures" and "new fads and fashions" affect educational purposes and that there are limitations to this approach, Bloom argued for the specification of learning outcomes which can be accomplished and which "are relevant for groups of students" (p.29).

> That *all* the purposes and specifications for education cannot be made explicit does not mean that *no* purposes or specifications should be made explicit. (p.29)

Lindvall and Cox (1969) discussed the use of "learning objectives . . . carefully defined in behavioral terms and sequenced in learning continua" and suggested that it be a requirement of the proposed general model for individualized instruction "that pupil performance be assessed in reference to these objectives" (p.168). Distinguishing between norm-referenced and criterion-referenced measures, the authors clearly indicated that "criterion or content-referenced measure[s] indicate how pupil proficiency corresponds to some desired criterion" (p.169).

Stake and Denny (1969) expressed hope that evaluation techniques would be generated "to assess the structure and coverage of the content of instructional materials" (p.379) as well as "better techniques for generating test items" (p.383) thereby reducing the problems of valid measurement instruments for classroom teacher-pupil interaction.

Applications of these principles of evaluation were presented in a comprehensive *Handbook on Formative and Summative Evaluation of Student Learning* by Bloom, Hastings, and Madaus (1971). A model for communicating "the relations among evaluation, instructional decisions, and the analysis of learners, instruction, and learning outcomes" (p.14) served as the generalized, organized schemata for planning and designing the CTM prototype curricula. Formative evaluation models, designs, and activities provided data for assessing the effectiveness of the curricula in producing the specified teacher competencies, as well as indicating necessary revisions for improving the instructional strategy.

Summative Evaluation

Design, method, and measurement requirements for determining the overall effectiveness of the teachers in producing pupil gains in the target population in the actual school environment was the essential concern of the summative evaluation. The summative evaluation questions to be answered in the CTM Project required data and information on (1) teacher behavior or competencies, (2) pupil performance or gain, and (3) the relationship between teacher competencies and pupil performance in "natural social settings." These researchable issues and methodological problems in studying "educational effects," particularly teacher effect on pupil achievement, have been reported in comprehensive reviews previously cited (Gage, 1963; Campbell and Stanley, 1963; Dubin and Taveggia, 1968; Rosenshine, 1971; Smith, 1971; and Gall, 1973). The data collection procedures in the variety of actual classroom situations utilized in the CTM Project required attention "to the possibility of creatively utilizing the idiosyncratic features of any specific research situation in designing unique tests of causal hypotheses" (Campbell and Stanley, 1963, p. 241). "Quasi-experimental" designs provided the investigators with the methodological procedures for studying the "effects of treatment" (teacher competencies) on pupil performance in public school classroom environments.

Campbell (1969) viewed "program evaluation" as an integral part of society's attempt to "try out new programs designed to cure specific social problems" (p. 409). Concerned that "decisions are made in a political area" by administrators lacking "hard-headed evaluation of effects," rather than "continuing or discontinuing programs on the basis of assessed effectiveness," Campbell offered suggestions "that might further a truly experimental approach to social reform" (p. 409).

Focusing on several of the "experimental and quasi-experimental designs . . . particularly appropriate for evaluating specific programs of social amelioration" (p. 412) Campbell highlighted general "threats to external validity" ranging from "weak . . . to stronger ones . . ." depending upon the "specific design" employed for a "specific setting" (pp. 411-412).

> The general ethic here advocated for public administrators as well as social scientists, is to use the very best method possible, aiming at "true experiments" with random control groups. But where randomized treatments are not possible, a self-critical use of quasi-experimental designs is advocated. We must do the best we can with what is available to as. (p. 411)
>
> The most common of such designs is the non-equivalent control-group pretest-posttest design in which for each of two natural

> groups, one of which receives the treatment, a pretest and posttest measure is taken. (p. 417)
>
> If the traditional mistaken practice is avoided of matching on pretest scores (with resultant regression artifacts), this design provides a useful control over those aspects of history, maturation and test-retest effects shared by both groups. (p. 417)

Campbell indicated that these "experimental or quasi-experimental analyses" offer for both "trapped" or "experimental administrators" decision making data for a "hard-headed analysis of the reform" (p.428).

The use of "nonrandomized control-group Pretest-Posttest . . . designs with partial control," where randomization cannot be achieved in the actual school classroom environment, involves an essential difference in procedure from those designs where random assignments are possible (Van Dalen, 1973). "Preassembled groups that are as similar as availability permits are selected and are given pretests. The pretest mean scores and standard deviations of the groups are compared to check their similarity" (p. 296), with the effect of treatment tested by the "paradigm" as described by Van Dalen (p. 296).

	Pretest	Treatment	Posttest
Experimental group	$T1_E$	X	$T2_E$
Control group	$T1_C$		$T2_C$

Cautious comparisons of the two "equivalent groups" can avoid the threats to internal validity in employing this procedure by eliminating the possible "regression effect" often found in this design (Van Dalen, p.297). The use of "intact classes" for "comparison groups" further minimizes the threats to "external validity of this design – the representativeness of the findings" (Van Dalen, p. 298).

Herriott and Muse (1973) offered a "conceptual framework" for considering "the methodological issues" in the "study of educational effects" (p.210) based upon "general systems theory" developed by Herriott and Hodgkins (1973). Focusing on the "schema incorporating both individual and systems levels" Herriott and Muse reviewed the issues of design, measurement, and data analysis. "Quasi-experimental and nonexperimental" alternative designs for studying the effects of instructional systems were described by the authors, particularly methodological procedures and data analysis for "collecting data on system inputs and outputs" (p.221).

Snow (1974) elaborated on the reality of conducting "research on teaching" in schools, because of the variability of classroom environments, treatments, students, and because the "need to consider learning outcome as multivariate" (p.273) requires the investigator to adapt "his research methodology to fit this form of phenomenon" (p.266).

> A minimal step toward representativeness is gained by moving standard experiments to relevant contexts, such as school rooms. At least, the institutional environment and the normal flow of everyday events is then represented. A far more important step is accomplished if the experiment can be embedded unobtrusively in this flow of events. (p.274)

Suggesting "two types of studies . . . G studies (for generalizability analyses) and D studies (for decisions)," Snow (1974) suggested that "instructional research . . . be designed as powerfully as possible for its own purpose: one for representativeness and descriptive generality; one for systematic, incise decisions about courses of action in further instructional design and theory construction" (p.285).

The summative evaluation research design utilized in the CTM Project addresses both outcomes, namely, systematic data collection and analysis for determining the effectiveness of the instructional strategy, as well as data for providing decision making information regarding the viability of the alternative manpower preparation program.

SUMMARY

In summary, the review of the pertinent literature on (1) teacher effectiveness, (2) conceptual changes, (3) conceptual models and instructional systems, and (4) evaluation research in education indicates that:

1. Researchers have not been successful in relating the behaviors of teachers to produced pupil behaviors, despite numerous attempts to define the "good teacher."
2. Research into the efficacy of special education programs has failed to demonstrate "effective treatment."
3. Investigators have criticized existing research practices and have recommended that the study of various problems in education should utilize designs that reflect the nature of the problem to be studied, and should occur in realistic environmental settings.

4. Significant conceptual changes are occurring in special education in terms of patterns of services and in programs for the preparation of personnel.
5. In special education there is a shift from disability or categorical labels to behavioral descriptors.
6. The skills or competencies of the Clinical Teacher have emerged from the history and philosophy of special education during the past two centuries.
7. New approaches and alternatives in special education have developed which need to be documented as effective. The documentation must include specifications of the strategies and descriptors of the population for whom it is effective (mild/severe). These documented effective products must be disseminated and diffused if impact on target populations is to be attained.
8. Models provide a framework for instructional design which enables developers to display their rationale for the relationships between and among curricular elements.
9. An instructional system provides for the translation of a conceptual model into an operationalized plan of outcomes, processes and products.
10. Performance Based Teacher Education is an attempt to define and specify teacher competencies in order to relate them to student achievement.
11. While there have been many variations in individualized instructional programs, there are a number of essentially common elements which appear in all such systems of instruction.
12. Evaluation models enable the instructional developers to establish the value of their contribution. It is the critical element in improving instruction.
13. Evaluation plans must be tailored and matched to outcomes and procedures so that they are appropriate for the purposes of the program to be evaluated.
14. Measurement of teacher behaviors must address two essential questions:
    (1) Has the teacher acquired the competency?
    (2) Is the competency actually used with effect in a classroom?
15. Evaluation research should center upon the most realistic elements in the actual classroom; therefore the most appropriate design for the study of teaching behaviors is the pre-test, post-test contrast group paradigm.
16. The outcome of the evaluation research strategy provides information for educational decision making and for generalization of findings.

REFERENCES

ABT Associates. Exemplary programs for the handicapped. Volume 1, final report. contract no. OEC-0-72-5182. Cambridge, Mass.: ABT Associates Inc., June 1973.

Anastasi, A. *Psychological testing* (3rd ed.). New York: Macmillan, 1968.

Ashcroft, S. A significant era in special education. *Apropos,* Spring, 1974, 1-4.

Baer, D.M., et al. Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis,* 1968, *1,* 91-97.

Baker F.B. Computer-based instructional management systems: A first look. *Review of Educational Research,* 1971, *41,* 51-70.

Balow, B. A program of preparation for teachers of disturbed children. *Exceptional Children,* 1966, *32,* 455-460.

Balthazar, E.E. & Stevens, H.A. *The emotionally disturbed, mentally retarded: A historical contemporary perspective.* Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Benathy, B.H. *Instructional systems.* Palo Alto, Cal.: Fearon Pub., 1968.

Binet, A. & Simon, T. The development of intelligence in children. In J. Jenkins & D. Paterson (Eds.), *Studies in individual differences.* New York: Appleton-Century-Crofts, 1961.

Blackman, L.S. The dimensions of a science of special education. *Mental Retardation,* 1967, *5,* 7-11.

Blackman, L.S. Research and the classroom: Mahomet and the mountain revisited. *Exceptional Children,* 1972, *39,* 181-191.

Blatt, B. The role of the state teachers college in the preparation of teachers of the mentally handicapped. *American Journal of Mental Deficiency,* 1959, *63,* 942-947.

Blatt, B. The preparation of special educational personnel. *Review of Education Research: Education of Exceptional Children,* 1966, *36,* 151-161.

Blatt, B. & Garfunkel, F. *The educability of intelligence.* Washington, D.C.: Council for Exceptional Children, 1965.

Blatt, B. & Garfunkel, F. Teaching the mentally retarded. In R. Travers (Ed.), *Second handbook of research on teaching.* Chicago: Rand McNally, 1973.

Block, J.H. (Ed.). *Mastery learning: Theory and practice.* New York: Holt, Rinehart and Winston, 1971.

Bloom, B.S. (Ed). *Taxonomy of educational objectives: The classification of educational goals, handbook 1, cognitive domain.* New York: McKay, 1956.

Bloom, B.S. Learning for mastery. *Evaluation Comment,* 1968, *1* (2).

Bloom, B.S., Hastings, J.T., & Madaus, G.F. *Handbook on formative and summative evaluation of student learning.* New York: McGraw-Hill, 1971.

Bloom, B.S. Some theoretical issues relating to educational evaluation. In W. Tyler (Ed.), *Educational Evaluation: New Roles, New Means, the Sixty-eighth Yearbook of the National Society for the Study of Education.* Chicago: The National Society, 1969, 26-50.

Boerrigter, G.C. Redesigning programs for the training of elementary teachers. *Journal of Research and Development in Education,* 1970, *3,* 1-7.

Bracht, G.H. Experimental factors related to aptitude-treatment interactions. *Review of Educational Research,* 1970, *40,* 627-645.

Bruner, J.S. *The process of education.* New York: Vintage Books, 1960.

Bruner, J. *Learning about learning: A conference report* (Cooperative Research Monograph No. 15). Washington, D.C.: U.S. Government Printing Office, 1966.

Burello, L.C., Guarino, R.L., & Poinsett, S. Research and practice: The changing role of the special education administrator. In L. Mann & D.A. Sabatino (Eds.), *The Second Review of Special Education.* Philadelphia: JSE Press, 1974.

Burk, F., & Washburne, C.W. The reorganization of normal school professional courses. *School and Society,* 1918, *8,* 382-385.

Cain, L.F. Special education moves ahead: A comment on the education of teachers. *Exceptional Children,* 1964, *30,* 211-217.

Campbell, D.T. & Stanley, J.C. Experimental and quasi-experimental designs for research on teaching. In N.L. Gage (Ed.), *Handbook of research on teaching.* Chicago: Rand McNally, 1963.

Campbell, D.T. Reforms as experiments. *American Psychologist,* 1969, *24,* 409-429.

Campbell, D.T. & Erlebacher, A. How regression artifacts in quasi-experimental evaluation can mistakenly make compensatory education look harmful. *Disadvantaged Child,* 1970, *3,* 185-211.

Carroll, J.A. A model of school learning. *Teachers College Record,* 1963, *64,* 723-733.

Cartwright, G.P. & Hall, K. A review of computer uses in special education. In L. Mann & D.A. Sabatino (Eds.), *The Second Review of Special Education.* Philadelphia: JSE Press, 1974.

Chalfant, J.C. & Scheffelin, M.A. *Central processing dysfunctions in children: A review of research.* (NINDS Monograph No. 9). Washington, D.C.: U.S. Government Printing Office, 1969.

Clarke, S.C.T. Designs for programs of teacher education. In B.O. Smith (Ed.), *Research in teacher education: A symposium.* Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Claytor, M.P. State certification requirements for teachers of atypical children. *Journal of Genetic Psychology,* June, 1952, 211-220.

Conant, J.B. *The education of American teachers.* New York: McGraw-Hill, 1963.

Cooper, J.M., Weber, W.A. & Johnson, C.E. (Eds.). *Competency-based teacher education 2: A systems approach to program design.* Berkeley, Cal.: McCutchen Publishing Co., 1973.

Council for Exceptional Children. *Professional standards for personnel in the education of exceptional children.* Washington, D.C.: Author, 1966.

Cronbach, L.J. The two disciplines of scientific psychology. *American Psychologist,* 1957, *12,* 671-684.

Cronbach, L.J. Evaluation for course improvement. *Teachers College Record,* 1963, *64,* 672-683.

Cronbach, L.J. How can instruction be adapted to individual differences? In R.M. Gagné (Ed.), *Learning and individual differences.* Columbus, Ohio: Merrill, 1967.

Cronbach, L.J., & Snow, R.E. *Individual differences in learning ability as a function of instructional variables, final report.* Stanford, Cal.: Stanford University, 1969.

Deno, E.N. Special education as developmental capital. *Exceptional Children,* 1970, *37,* 229-237.

Deno, E.N. (Ed.). *Instructional alternatives for exceptional children.* Washington, D.C.: The Council for Exceptional Children, 1973.

DeVault, M.V., Buchanan, A.E., & Nelson, E.I. *Description of the school context for the computer managed systems of mathematics instruction project.* Research and Development Center for Cognitive Learning, University of Wisconsin, 1969.

DeVault, M.V., Kriewall, T.E., Buchanan, A.E. & Quilling, M.R. *Teacher's manual: Computer management for individualized instruction in mathematics and reading.* Research and Development Center for Cognitive Learning, University of Wisconsin, 1969.

DeVault, M.V., Anderson, D.W., & Dickson, G.E., (Eds.). *Competency-based teacher education: Problems and prospects for the decades ahead.* Berkeley, Cal.: McCutchen Publishing Co., 1973.

Dick, W. and Gallagher, P. Systems concepts and computer-managed instruction: An implementation and validation study. *Educational Technology,* 1972, *12,* 33-39.

Dodl, N.R. *A feasibility study of the Florida State University model for the preparation of elementary school teachers.* Washington, D.C.: U.S. Office of Education, National Center for Educational Research and Development, 1969.

Doll, E.E. Trends and problems in the education of the mentally retarded: 1800-1940. *American Journal of Mental Deficiency,* 1967, *72,* 175-183.

Dorward, B.A. A comparison of the competencies for regular classroom teachers and teachers of emotionally disturbed children. *Exceptional Children,* 1963, *30,* 67-73.

Dubin, R. & Taveggia, T.C. *The teaching-learning paradox.* Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1968.

Dunn, L.M. Special education for the mildly retarded — is much of it justifiable? *Exceptional Children,* 1968, *34,* 5-22.

Dunn, L., Phelps, H.R., & Kirk, S.A. Education and diagnosis. *The Training School Bulletin,* 1958, *55,* (2), 38-41.

Ebel, R.L. (Ed.). *Encyclopedia of educational research.* Toronto: The Macmillan Co., 1969.

Elam, S. Performance-based teacher education: What is the state of the art? AACTE *Bulletin,* 1971, *24,* 6-7.

Featherstone, W.B. Preparation of special education teachers. *Education,* March, 1950, 460-465.

Flanagan, J.C. Program for learning in accordance with needs. *Psychology in the Schools,* 1969, *6,* 133-136.

Flanagan, J.C. The PLAN system for individualizing education. *NCME Measurement in Education,* 1971, *2,* 2.

Gage, N.L. (Ed.). *Handbook of research on teaching.* Chicago, Ill.: Rand McNally, 1963.

Gage, N.L. & Unruh, W.R. Theoretical foundations for research on teaching. *Review of Educational Research,* 1967, *37,* 358-370.

Gage, N.L. *Teacher effectiveness and teacher education: The search for a scientific basis.* Palo Alto, Cal.: Pacific Books, 1972.

Gagné, R.M. *The conditions of learning.* New York: Holt, Rinehart and Winston, 1965.

Gagné, R.M. Educational technology as technique. *Educational Technology,* 1968, *8,* 5-13.

Gagné, R.M. Policy implications and future research: A response. In *Do teachers make a difference: A report on recent research on pupil achievement.* Washington, D.C.: U.S. Government Printing Office, 1970.

Gagné, R.M. Educational technology and the learning process. *Educational Research,* 1974, 3-8.

Gall, M.D. *The problem of "student achievement" in research on teacher effects.* Report A73-2. Far West Laboratory for Educational Research and Development, 1973.

Gilhool, T.K. Education: An inalienable right. *Exceptional Children,* 1973, *39,* 597-609.

Glaser, R. Adapting the elementary school curriculum to individual performance. *Proceedings of the 1967 Invitational Conference on Testing Problems,* Educational Testing Service, 1968.

Goldstein, H., Moss, J.W., & Jordan, L.J. *The efficacy of special class training on the development of mentally retarded children.* Cooperative Research Project No. 619. Urbana, Ill.: Institute for Research on Exceptional Children, University of Illinois, 1965.

Good, C.V. (Ed.). *Dictionary of education* (2nd ed.). New York: McGraw-Hill, 1959.

Guilford, J.P. & Merrifield, P.R. The structure of intellect model: Its uses and implications. *Reports from the Psychological Laboratory,* Univ. of Southern California, April, 1960, 13.

Guralnick, M.J. A research-service model for support of handicapped children. *Exceptional Children,* 1973, *40,* 277-282.

Haring, N.G. The new curriculum design in special education. *Educational Technology,* 1970, *10,* 24-31.

Hansen, D.H., Dick, W. & Lippert, H.T. *Annual progress report.* Tallahassee, Fla.: Florida State University, 1969.

Henry, E.R. *Individualizing instruction, the Sixty-first Yearbook of the National Society for the Study of Education, Part I.* Chicago: The National Society, 1962.

Herman, R. *Leadership for the handicapped.* Minneapolis, Minn.: The University of Minnesota Leadership Series in Special Education, 1973.

Herriott, R.E. & Hodgkins, B.J. *The environment of schooling: Formal education as an open social system.* Englewood Cliffs, N.J.: Prentice-Hall, 1973.

Herriott, R.E. & Muse, D.N. Methodological issues in the study of school effects. In F.N. Kerlinger (Ed.), *Review of research in education.* Itasca, Ill.: F.E. Peacock, 1973.

Hewett, F.M. A hierarchy of educational tasks for children with learning disorders. *Exceptional Children,* 1964, *31,* 207-214.

Hewett, F.M. A hierarchy of competencies for teachers of emotionally handicapped children. *Exceptional Children,* 1966, *33,* 7-11.

Hewett, F.M. & Blake, P.R. Teaching the emotionally disturbed. In R.M. Travers (Ed.), *Second handbook of research on teaching.* Chicago: Rand McNally, 1973.

Houston, R.W. & Howsam, R.B. (Eds.). *Competency-based teacher education: Progress, problems, and prospects.* Chicago: Science Research Associates, Inc., 1972.

Hunt, D.E. *Matching models in education: The coordination of teaching methods with student characteristics.* Ontario, Canada: The Ontario Institute for Studies in Education, 1971.

Jerman, M. *Teacher handbook.* Stanford, Cal.: Stanford University, Institute for Mathematical Studies in the Social Sciences, 1969.

Johnson, D.J. & Myklebust, H.R. *Learning disabilities: Educational principles and practices.* New York: Grune & Stratton, 1967.

Johnson, G.O. & Blank, H.D. (Eds.). *Exceptional children research review.* Washington, D.C.: The Council for Exceptional Children, 1968.

Jones, R.L. Research on the special education teacher and special education teaching. *Exceptional Children,* 1966, *33,* 251-257.

Joyce, B. & Weil, M. *Models of teaching.* Englewood Cliffs, N.J.: Prentice-Hall, 1972.

Kanner, L. *A history of the care and study of the mentally retarded.* Springfield, Ill.: Charles C. Thomas, 1964.

Kaya, E. A curricular sequence based on psychological processes. *Exceptional Children,* 1961, *27,* 425-428.

Kelley, A.C. The economics of teaching: The role of TIPS. Paper presented at conference on new developments in the teaching of economics, Stanford University, 1968.

Kirk, S.A. *Early education of the mentally retarded.* Urbana, Ill.: University of Illinois Press, 1958.

Kirk, S.A. Educating the handicapped (U.S. Office of Education *Bulletin* No. 3, consultants' papers prepared for use at the White House Conference on Education). Washington, D.C.: U.S. Government Printing Office, 1965.

Lake, T.P. (Eds.). *Manpower development exemplary programs for the handicapped.* Reston, Va.: The Council for Exceptional Children, 1974.

Lance, W.D. A clinical approach to the preparation of teachers of the mentally retarded. *Education and Training of the Mentally Retarded,* 1966, *1,* 100-103.

Levine, S. A proposed conceptual framework for special education. *Exceptional Children,* 1961, *28,* 83-90.

Light, R.J. & Smith, P.V. Choosing a future: Strategies for designing and evaluating new programs. *Harvard Educational Review,* 1970, *40,* 1-28.

Lilly, M.S. The impact (or lack of it) of educational research on changes in educational practice. In L. Mann & D.A. Sabatino (Eds.), *The first review of special education* (Vol. 2). Philadelphia: JSE Press, 1973.

Lindvall, C.M. *Defining educational objectives.* Pittsburgh: University of Pittsburgh Press, 1964.

Lindvall, C.M. & Cox, R.C. The role of evaluation in programs for individualized instruction. In R.W. Tyler (Ed.), *Educational Evaluation: New Roles, New Means, the Sixty-eighth Yearbook of the National Society for the Study of Education.* Chicago: The National Society, 1969.

Lindsey, M. *Accreditation in teacher education.* Reston, Va.: The Council for Exceptional Children, Professional Standards/ Guidelines Project, 1974.

Lord, F.E. & Kirk, S.A. The education of teachers of special classes. In *Forty-Ninth Yearbook of the National Society for the Study of Education, Part II.* Bloomington, Ill.: Public School Publishing Co., 1950.

Mackie, R.P., Williams, H.M., & Dunn, L.M. *Teachers of children who are mentally retarded* (U.S. Office of Education Bulletin Number 3). Washington, D.C.: U.S. Government Printing Office, 1957.

Mager, R.F. *Preparing instructional objectives.* Palo Alto, Cal.: Fearon Publishers, 1962.

Mann, L. & Sabatino, D.A. (Eds.). *The first review of special education* (Vol. 2). Philadelphia: JSE Press, 1973.

Mann, L. & Sabatino, D.A. (Eds.). *The second review of special education.* Philadelphia: JSE Press, 1974.

Mann, P.H. *Mainstream special education: Issues and perspectives in urban centers.* Reston, Va.: The Council for Exceptional Children, 1974.

Martens, E.H. *State supervisory programs for the education of exceptional children* (U.S. Office of Education Bulletin No. 6). Washington, D.C.: U.S. Government Printing Office, 1940.

Martin, E.W. Individualism and behaviorism as future trends in educating handicapped children. *Exceptional Children,* 1972, *38,* 517-525.

McKenzie, H.S. Consulting teacher program. In L. Schwartz et al., *Innovative noncategorical and interrelated projects in the education of the handicapped.* U.S. Office of Education, Bureau of Education for the Handicapped, Project No. 19-1800. Tallahassee, Fla.: Florida State University, 1972.

Meisgeier, C. The identification of successful teachers of mentally or physically handicapped children. *Exceptional Children,* 1965, *32,* 229-235.

Meyen, E.L. (Ed.). *Proceedings: The Missouri conference on the categorical/non-categorical issue in special education.* Columbia, Mo.: University of Missouri, 1971.

Morrisett, L. Curriculum: Education and research, the changing pattern of curriculum construction. In J. Bruner (Ed.), *Learning about learning: A conference report* (Cooperative Research Monograph No. 15). Washington, D.C.: U.S. Government Printing Office, 1966.

National Society for the Study of Education. *The Measurement of Educational Products, the Seventeenth Yearbook of the National Society for the Study of Education, Part II.* Chicago: The National Society, 1918.

Otto, W. & McMenemy, R.A. *Corrective and remedial teaching: Principles and practices.* Boston: Houghton Mifflin Co., 1966.

Parkhurst, H. The Dalton laboratory plan. In *Individualizing Instruction, the Twenty-fourth Yearbook of the National Society for the Study of Education, Part II.* Bloomington, Illinois: Public School Publishing Co., 1929.

Peter, L.J. *Prescriptive teaching.* New York: McGraw-Hill, 1965.

Popham, W.J. *Instructional objectives.* Chicago: Rand McNally, 1969.

Potter, D.A. A research strategy for performance-based education. Paper presented at the meeting of the American Educational Research Association, New Orleans, February, 1973.

Proger, B.B. Program evaluation: The model-building game. *Journal of Learning Disabilities,* 1971, *4,* 7-21.

Quay, H.C. The facets of educational exceptionality: A conceptual framework for assessment, grouping, and instruction. *Exceptional Children,* 1968, *35,* 25-32.

Reynolds, M.C. A framework for considering some issues in special education. *Exceptional Children,* 1962, *28,* 367-370.

Reynolds, M.C. A strategy for research. *Exceptional Children,* 1963, *29,* 213-219.

Reynolds, M.C. & Davis, M.D. (Eds.). *Exceptional children in regular classrooms.* Minneapolis, Minn.: University of Minnesota, 1971.

Reynolds, M.C. & Balow, B. Categories and variables in special education. *Exceptional Children,* 1972, *38,* 357-366.

Rippey, R.M. (Ed.). *Studies in transactional evaluation.* Berkeley, Cal.: McCutchen, 1973.

Rosenshine, B. & Furst, N. Research on teacher-performance criteria. In B.O. Smith (Ed.), *Research in teacher education. A symposium.* Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Rosenshine, B. *Teaching behaviours and student achievement.* London: National Foundation for Educational Research in England and Wales, 1971.

Sarason, S.B., Davidson, K., & Blatt, B. The preparation of teachers: An unstudied problem in education. New York: John Wiley and Sons, Inc., 1962.

Sarason, S.B. & Doris, J. *Psychological problems in mental deficiency* (4th ed.). New York: Harper & Row, 1969.

Schmieder, A.A., *Competency-based education: The state of the scene.* Washington, D.C.: AACTE, February, 1973.

Schwartz, L. An integrated teacher education program for special education — a new approach. *Exceptional Children,* 1967, *33,* 411-416.

Schwartz, L. Preparation of the clinical teacher for special education: 1866-1966. *Exceptional Children,* 1967, *34,* 117-124.

Schwartz, L. A clinical teacher model for interrelated areas of special education. *Exceptional Children,* 1971, *37,* 565-571.

Schwartz, L., Oseroff, A., Drucker, H., & Schwartz, R. *Innovative noncategorical and interrelated projects in the education of the handicapped.* U.S. Office of Education, Bureau of Education for the Handicapped, Project No. 19-1800. Tallahassee, Fla.: Florida State University, 1972.

Scriven, M. *The methodology of evaluation.* AERA Monograph Series On Curriculum Evaluation, No. 1. Chicago: Rand McNally, 1967.

Silberman, H.G. *Design objectives of the instructional management system.* SP 3038/001/00. Santa Monica, Cal.: Systems Development Corp., 1968.

Simches, R. In P.H. Mann (Ed.), *Mainstream special education: Issues and perspectives in urban centers.* Reston, Va.: The Council for Exceptional Children, 1974.

Smith, B.O. (Ed.). *Research in teacher education: A symposium.* Englewood Cliffs, N.J.: Prentice-Hall, 1971.

Smith, N.L. & Murray, S.L. The status of research on models of product development and evaluation. *Educational Technology,* 1975, *15,* 13-17.

Smith, R.M. *Clinical teaching: Methods of instruction for the retarded.* New York: McGraw-Hill Book Co., 1968.

Smith, R.M. & Neisworth, J.T. Some problems of and prospects for research in mental retardation. *Mental Retardation,* 1969, *7,* 25-28.

Smith, R.M. & Neisworth, J.T. *The exceptional child: A functional approach.* New York: McGraw-Hill, 1975.

Snow, R.E. Theory construction for research on teaching. In R.M. Travers (Ed.), *Second handbook of research on teaching.* Chicago, Ill.: Rand McNally, 1973.

Snow, R.E. Representative and quasi-representative designs for research on teaching. *Review of Educational Research,* 1974, *44,* 265-291.

Stake, R.E. & Denny T. Needed concepts and techniques for utilizing more fully the potential of evaluation. In R. W. Tyler (Ed.), *Educational Evaluation: New Roles, New Means, the Sixty-eighth Yearbook of the National Society for the Study of Education.* Chicago: The National Society, 1969.

Stake, R.E. The countenance of educational evaluation. *Teachers College Record,* 1967, *68,* 523-540.

Stellern, J. Outer city prescriptive teaching training model. In L. Schwartz et al., *Innovative noncategorical and interrelated projects in the education of the handicapped.* U.S. Office of Education, Bureau of Education for the Handicapped, Project No. 19-1800. Tallahassee, Fla.: Florida State University, 1972.

Stevens, G.D. & Birch, J.W. A proposal for clarification of the terminology used to describe brain-injured children. *Exceptional Children,* 1957, *23,* 346-349.

Stevens, G.D. *Taxonomy in special education for children with body disorders: The problem and a proposal.* Pittsburgh: Univ. of Pittsburgh, Dept. of Special Education and Rehabilitation, 1962.

Suchman, E.A. *Evaluative research: Principles and practice in public service & social action programs.* New York: Russell Sage Foundation, 1967.

Sullivan, H.J. *Objectives, evaluation, and improved learner achievement.* AERA Monograph Series on Curriculum Evaluation. No. 3. Chicago: Rand McNally, 1969.

Thorndike, E.L. *Educational psychology (Vol. 1): The original nature of man.* New York: Teachers College Press, Columbia University, 1913.

Travers, R.M. (Ed.). *Second handbook of research on teaching.* Chicago: Rand McNally, 1973.

Turner, R.L. & Fattu, N.A. Skill in teaching: A reappraisal of the concepts and strategies in teacher effectiveness research. *Bulletin of the School of Education,* Indiana University, 1960, *36,* iii.

Turner, R.L. Levels of criteria. In B. Rosner (Ed.), *The power of competency-based teacher education: A report.* Boston: Allyn and Bacon, 1972.

Tyler, R.W. *Constructing achievement tests.* Columbus, Ohio: Ohio State Univ., 1934.

Tyler, R.E. (Ed.). *Educational evaluation: New roles, new means, the Sixty-eighth Yearbook of the National Society for the Study of Education.* Chicago.: The National Society, 1969.

Van Dalen, D.B. *Understanding educational research: An introduction.* New York: McGraw-Hill, 1973.

Wallin, J.E.W. *The mental health of the school child.* New Haven, Conn.: Yale University Press, 1914.

Wallin, J.E.W. State provisions for mentally handicapped school children in the United States. *The Training School Bulletin,* April-June, 1934.

Wallin, J.E.W. Trends and needs in teacher training. *Journal of Exceptional Children,* June, 1937, 144-147.

Washburne, C. *Adjusting the school to the child: Practical first steps.* Yonkers-on-Hudson, New York: World Book Co., 1932.

Weber, W.A., Cooper, J.M. & Houston, R. *A guide to competency-based teacher education.* Westfield, Texas: Competency-Based Instructional Systems, 1973.

Witmer, L. *The special class for backward children: An educational experiment conducted for the instruction of teachers and other students of child welfare by the psychological laboratory and clinic of the University of Pennsylvania.* Philadelphia: Psychological Clinic Press, 1911.

Whelan, R.J. & Sontag, E. Prologue: Special education and the cities. In P.H. Mann (Ed.), *Mainstream special education: Issues and perspectives in urban centers.* Reston, Va.: The Council for Exceptional Children, 1974.

Whipple, G.M. Adopting the schools to individual differences, report of the society's committee. In *Twenty-fourth Yearbook of the National Society for the Study of Education, Part II.* Chicago: The National Society, 1925.

CHAPTER 3

PROCEDURES

Evaluation research plans, objectives, designs, and procedures were conceptualized and implemented to determine the *effectiveness* or *value*, of the Clinical Teacher Model Project. Evaluation plans and criteria for determining and measuring effectiveness were initially described in the institutional application for federal assistance (Program Development Grant, December, 1969) and reported by Schwartz (1971, p. 570).

The successful attainment of the CTM Project objectives will be documented by the data generated by the formative and summative evaluation research activities described in this chapter. The research designs and procedures were selected and implemented to answer the questions formulated for evaluating the specified objectives and program elements, and their effects on teachers and pupils in actual school environments. Following a brief description of the overall organizing approach to the establishment and evaluation of the Project, formative procedures are presented which were designed to provide data on the effectiveness of the training program. The next section describes the summative evaluation research design utilized for studying the effects of treatment in varying, natural, and representative classes, schools, and educational systems.

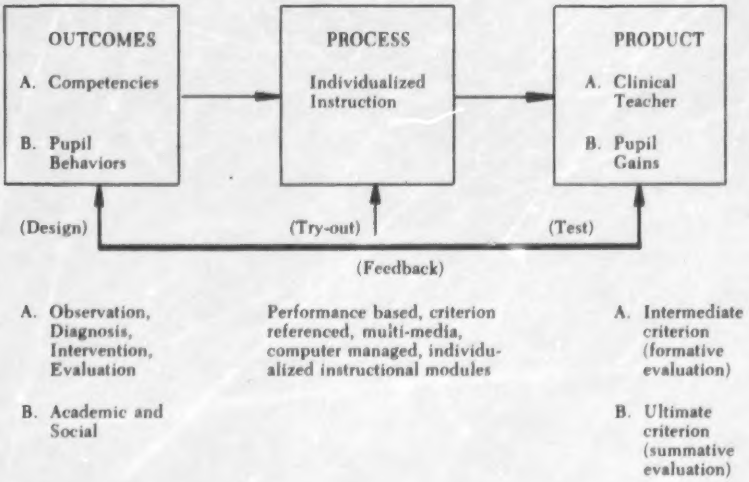
APPROACH

Instructional research and development requires of the participants an unusually high tolerance for ambiguity, and vague and temporary situations, in addition to skills for maintaining collaborative relationships. These characteristics enable the team to employ a problem-solving approach and make task-oriented decisions. Participating personnel must demonstrate adapting and coping behaviors and creative interaction, in order to design conceptual models and instructional systems which unify the concerted effort towards specified and measurable outcomes. Identification, development, and utilization of appropriate instructional resources and assessment measures provides feedback for the refinement and subsequent improvement of both content and process.

The selection and assemblage of the team to design, try-out and evaluate a new curriculum was an initial and critical phase of the Project. Successful performance of such an interdisciplinary team required unusually competent individuals who understood, appreciated, and respected the unique contributions of each. In order to achieve this mix, an extraordinary commitment to the outcomes and faith in the promises offered by the concept was extended by the funding agency. This venture in instructional reform represents an exemplary use of developmental capital over a long period to bring about change in education.

The overall organizing strategy for the Clinical Teacher Model Project was adopted early in the first implementation year (1970-1971). Figure 1 presents the distinctive elements of the unified system planned and utilized by the curriculum team.

FIGURE 1. INSTRUCTIONAL SYSTEM


OUTCOMES
A. Competencies
B. Pupil Behaviors
PROCESS
Individualized Instruction
PRODUCT
A. Clinical Teacher
B. Pupil Gains
(Design)
(Try-out)
(Test)
(Feedback)
A. Observation, Diagnosis, Intervention, Evaluation
B. Academic and Social
Performance based, criterion referenced, multi-media, computer managed, individualized instructional modules
A. Intermediate criterion (formative evaluation)
B. Ultimate criterion (summative evaluation)

Specification of the competencies necessary for producing learning in the pupils is an essential element of a performance-based teacher training program. A basic assumption of the Clinical Teacher Model Project is that common competencies are appropriate for teaching all mildly handicapped children, regardless of their exceptionalities. The generic Clinical Teacher competencies defined in the Project include observation, diagnosis, intervention, and evaluation. Each of these major competencies contains many subordinate objectives specified in the curriculum on three levels: knowledge, skills, and pupil gains. These measurable competencies are demonstrated by the trainees during field-based training experiences. Terminal performance criteria for the Clinical Teacher include demonstration of these competencies for bringing about desired behavioral changes in pupils.

Both the content and process of *clinical teaching,* i.e., *individualizing instruction,* are intimately and inextricably interrelated within the research and development activities. The generic teacher competencies of observation, diagnosis, intervention, and evaluation are skills for individualizing instruction. These skills enable the Clinical Teacher to produce the common desired academic and social behaviors required for exceptional children to succeed in the regular classroom. A common core of individualized and field-based training experiences prepares teachers with these competencies to serve a variety of mildly handicapped children.

The success of a Project in achieving its goals and objectives should be more than a chance occurrence. Although advanced planning is absolutely essential, in-cycle decisions often determine ultimate success or failure. Continuous monitoring of Project activities provided the staff with current information for decisions. The quality of such decisions was dependent upon the selection and accurate assessment of relevant variables, i.e. outcomes, processes and products. To provide a basis for determining the achievement of various Project objectives, the following time-line and distribution of staff effort for major Project functions was projected in 1970 for the period 1970-75.

FIGURE 2

ESTIMATED PER CENT OF EFFORT FOR FUNCTIONS

Functions	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975
PROGRAM ESTABLISHMENT Systems, Models, Curricula Development, Design and Revision of Performance Based Instructional Modules.	60%	40%	25%	15%	5%
INSTRUCTIONAL FIELD TRIALS Implementation of Modules, Performance Competencies, Practicum–Seminars, Assessment, Advisement.	20%	25%	30%	35%	35%
EVALUATION Performance Criterion Measures, Testing, Analysis, Findings, Feedback.	15%	20%	25%	25%	35%
MANAGEMENT Monitoring Performance Progress	5%	15%	20%	25%	25%
TOTAL	100%	100%	100%	100%	100%

FORMATIVE EVALUATION

OBJECTIVES

1. To provide the project staff with consistent feedback of information required for in-cycle decision making including:
    - 1.1 Curriculum data with accompanying analyses of learning events for use in revising instructional materials.
    - 1.2 Student data required for prescribing personalized instructional events.
    - 1.3 Student progress reports needed for counseling purposes and for refinement of trainee selection procedures.

    This information will be reported through:

    Weekly reports of individual student performance.
    Quarterly reports of student progress and cumulative data concerning curriculum effectiveness.
    Annual evaluation summaries concerning progress in establishing and maintaining the Clinical Teacher Training Program.

2. To assess as specified in the modules the terminal performance of trainees at the completion of each instructional event in order to:
    - 2.1 Identify optimal and preferred learning styles of individual students for use in intervention techniques.
    - 2.2 Maintain cumulative records of student attainment of behaviors identified for the Clinical Teacher.
    - 2.3 Identify students in need of remediation.
    - 2.4 Identify instructional weaknesses and recommend appropriate revisions in materials and/or methods.

3. To assess, upon completion of each training component, the effectiveness of the CTM in providing trainees with the competencies established for that component of Clinical Teacher activities.

    Effectiveness will be measured in terms of:

    - 3.1 Trainee demonstration of criterion level performance on each instructional module of the component.
    - 3.2 Trainee performance of tasks which are representative of the general competency specified by the component.
    - 3.3 Trainee opinions of the instructional processes as an alternative to more conventional instructional courses.
    - 3.4 The relationship between instructional time and trainee performance.

FORMATIVE ANALYSIS MODEL DESIGN

The Clinical Teacher Model was designed as an individualized performance-based instructional system. Requirements of a performance-based system include high probability of learner success under conditions of optimal efficiency. Development of an effective and efficient instructional system generally proceeds through an iterative process of formative evaluation and revision. Since most procedures for the formative evaluation of instruction have emerged in conjunction with the general development of programmed materials, it was deemed necessary to formulate more specific procedures appropriate for the Clinical Teacher Model Project.

The Formative Analysis Model consists of two major components: logical analysis and empirical analysis (see Figure 3). Logical analysis refers to all evaluative activities which occur prior to pilot implementation of the instruction. Empirical analysis encompasses all formative evaluation procedures employed during field test operations. Together, the two components provided detailed and comprehensive information for the instructional program.

FIGURE 3
FORMATIVE ANALYSIS MODEL

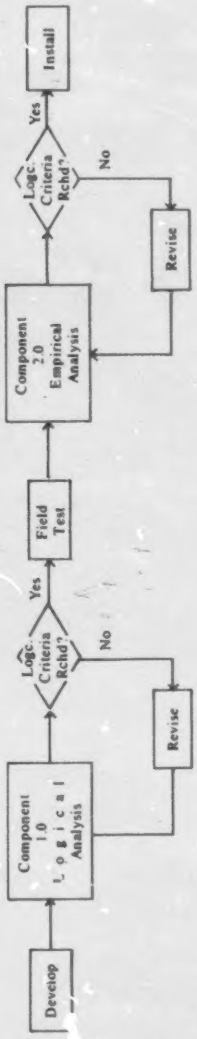

Develop
Component 1.0 Logical Analysis
Logc. Criteria Rchd?
Yes
No
Revise
Field Test
Component 2.0 Empirical Analysis
Logc. Criteria Rchd?
Yes
No
Revise
Install

FIGURE 4
FORMATIVE ANALYSIS MODEL
Component 1.0: Logical Analysis

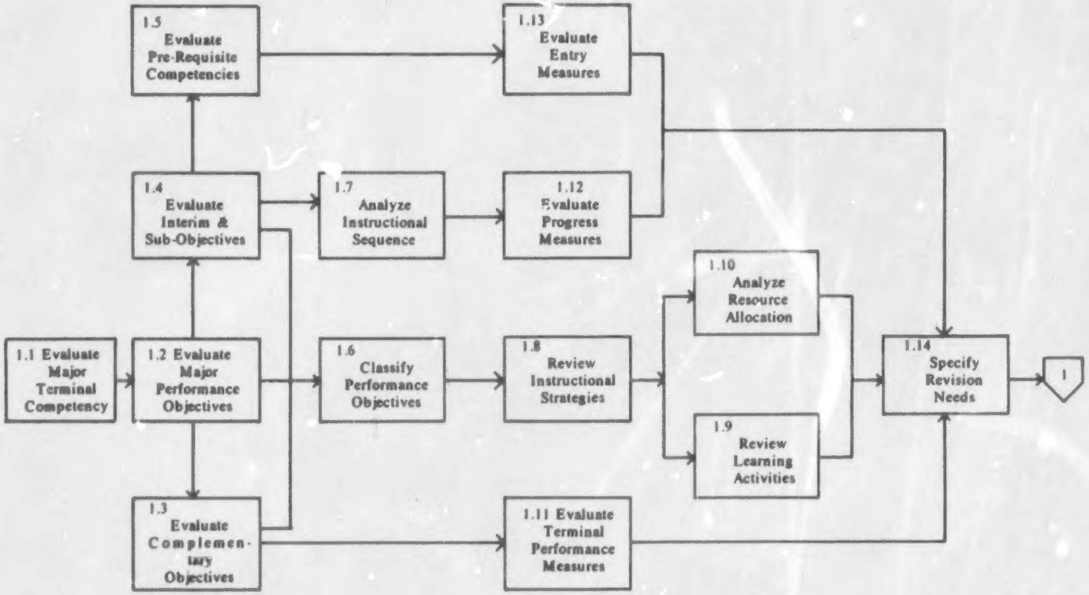
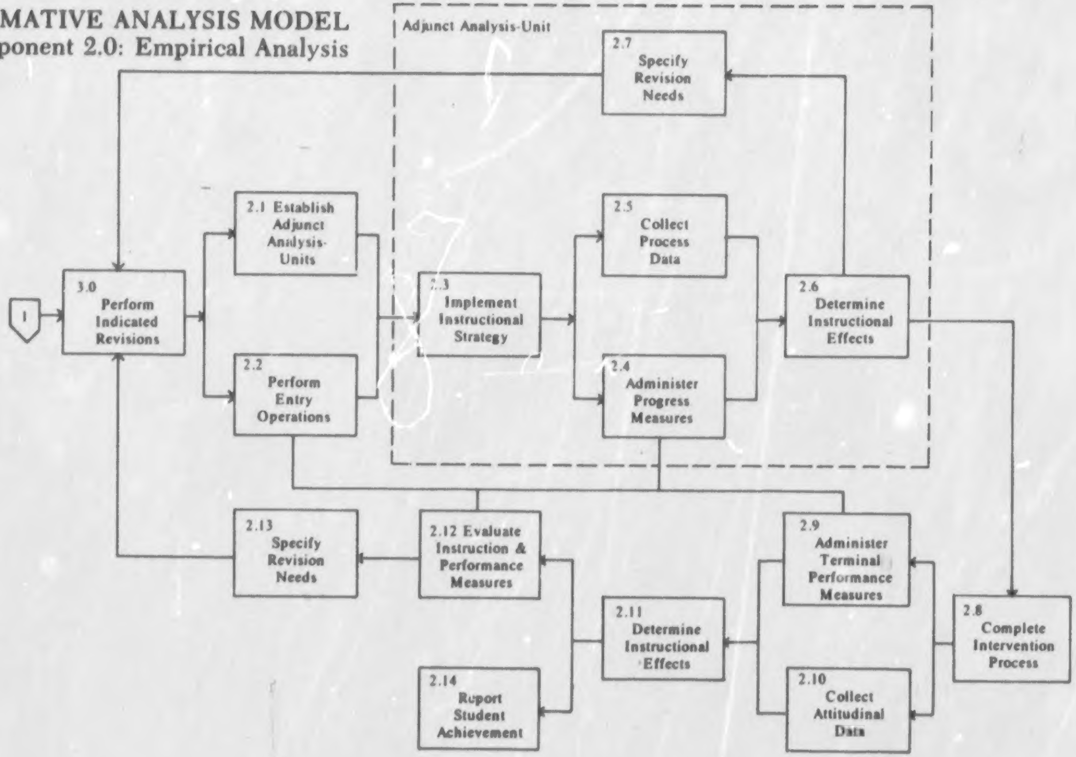

1.1 Evaluate Major Terminal Competency
1.2 Evaluate Major Performance Objectives
1.3 Evaluate Complementary Objectives
1.4 Evaluate Interim & Sub-Objectives
1.5 Evaluate Pre-Requisite Competencies
1.6 Classify Performance Objectives
1.7 Analyze Instructional Sequence
1.8 Review Instructional Strategies
1.9 Review Learning Activities
1.10 Analyze Resource Allocation
1.11 Evaluate Terminal Performance Measures
1.12 Evaluate Progress Measures
1.13 Evaluate Entry Measures
1.14 Specify Revision Needs
1

FIGURE 5

FORMATIVE ANALYSIS MODEL
Component 2.0: Empirical Analysis


Adjunct Analysis-Unit
1
3.0 Perform Indicated Revisions
2.1 Establish Adjunct Analysis-Units
2.2 Perform Entry Operations
2.3 Implement Instructional Strategy
2.5 Collect Process Data
2.4 Administer Progress Measures
2.6 Determine Instructional Effects
2.7 Specify Revision Needs
2.8 Complete Intervention Process
2.9 Administer Terminal Performance Measures
2.10 Collect Attitudinal Data
2.11 Determine Instructional Effects
2.12 Evaluate Instruction & Performance Measures
2.13 Specify Revision Needs
2.14 Report Student Achievement

RATIONALE FOR MODEL COMPONENTS AND SUB-COMPONENTS

1.0 *Logical Analysis*

The Logical Analysis Component (1.0) of the model is expanded in Figure 4. The primary purpose of logical analysis is to examine the apparent quality of, and degree of consistency among, the instructional objectives, the performance measures, and the instructional methods and materials. Although the ultimate test of an instructional program is student performance, the logical analysis activities enable correction of many inadequacies prior to implementation. This phase of the evaluation was designed to answer questions of the following type:

1. Are the objectives valid?
2. Do the objectives and performance measures conform to the adopted technical specifications?
3. Are the instructional processes consistent with accepted learning theory?
4. Does the instructional strategy match the learning task?
5. Are the resources appropriate for the instructional strategy?
6. Is the instructional sequence appropriate?
7. Are the objectives, methods, materials, and tests logically consistent?

Brief statements of the rationale or purpose of the model sub-components are presented below to provide further explanation of the nature of the formative analysis activities.

1.1 Evaluate Major Terminal Competency
The major terminal competency provides an operational statement of what the learner will be able to do after completing a major component of the instructional program.

1.2 Evaluate Major Performance Objectives
Major performance objectives delineate the desired learning outcomes of each modular unit. Any performance data collected during subsequent field tests will be without meaning if unintended behaviors are mistaken for the desired ones.

1.3 Evaluate Complementary Objectives
Complementary objectives identify desired learning outcomes which are likely to influence performance of the major objectives. Examples of such outcomes include attitudes, motives, sociability, and interpersonal skills.

1.4 Evaluate Interim and Sub-Objectives
Interim and sub-objectives represent skills which either facilitate or are pre-requisite to mastery of the major objectives. They differ in that sub-objectives comprise an integral part of

the terminal performance while interim objectives are generally process-oriented and need not be retained.

1.5 Evaluate Pre-requisite Competencies
Pre-requisite competencies specify entering capabilities required for profitable learning experiences in an instructional module.

1.6 Classify Performance Objectives
The goal of instruction is to provide optimal learning conditions for the learner. The nature of the learning task has important implications for instructional decisions related to matching activities and resources to the type of learning.

1.7 Analyze Instructional Sequence
Systematic instruction emphasizes the importance of following an optimal sequence of learning events. Where learning hierarchies are known to exist, the sequence of instruction is generally inherent. For sequencing events which lack intrinsic inter-dependency, logical analysis techniques are useful.

1.8 Review Instructional Strategies
Instructional strategies should be appropriate for the type of learning specified in the objectives.

1.9 Review Learning Activities
Activities involving the learner should be completely consistent with the overall instructional strategies adopted for mastery of the objectives.

1.10 Analyze Resource Allocation
Patterns of resource usage should facilitate implementation of the instructional strategies devised for meeting learner needs.

1.11 Evaluate Terminal Performance Measures
Terminal performance measures provide evidence of student proficiency with respect to desired instructional outcomes. Instructional integrity is dependent upon the ability to correctly distinguish between adequate and inadequate learning.

1.12 Evaluate Progress Measures
Progress measures provide two important types of information. They enable curriculum designers to pinpoint weaknesses in the instructional system and permit learners to check their progress in attaining the terminal behavior.

1.13 Evaluate Entry Measures
Entry measures should provide diagnostic information concerning learner possession of pre-requisite competencies and facilitate proper placement in the instructional sequence.

1.14 Specify Revision Needs
The quality of the formative analysis effort is ultimately

determined by the extent to which the obtained data facilitates appropriate revision decisions.

2.0 *Empirical Analysis*
Once consistency within and among all aspects of an instructional program is established, student performance is optimized through systematic revision based upon empirical data. Component 2.0 of the analysis model, presented in Figure 4, 5, outlines activities involved in the empirical investigation of the instructional modules. Primary indicators of revision needs are: (1) pre-post performance differential, (2) student comments, and (3) adjunct analysis-unit error rate.

2.1 Establsh Adjunct Analysis-Units
Adjunct analysis-units are created to generate performance data at the completion of each interim and sub-objective. Response patterns at the analysis-unit level provide information which is analogous to frame error rate, one of the most useful revision indicators in the development of programmed instruction. Such information aids in the location of specific instructional inadequacies which may not be revealed by posttest results.

2.2 Perform Entry Operations
In order to relate learner achievement to instructional effects, only students who possess the required entry behaviors, but not the desired terminal competencies, can be included in the field test sample. Entry measures are employed for selection of members of the target population for the pilot implementation.

2.3 Implement Instructional Strategy
The true test of an instructional sequence resides in its ability to effectively modify learner behavior in the prescribed manner. It is critical that implementation occur exactly as designed and under highly similar conditions to those where the instruction will eventually be used.

2.4 Administer Progress Measures
Progress measures provide information concerning the impact of each instructional event upon learner achievement of the specified outcomes.

2.5 Collect Process Data
Process data often permits differentiation between inherent instructional deficiencies and problems attributable to the field test situation or other external influences. Process data also facilitates the pinpointing of specific revision needs.

2.6 Determine Instructional Effects
The effects of an instructional sequence should be viewed in terms of unsatisfied learner needs and on instructional inadequacies in order to permit remediation of both.

2.7 Specify Revision Needs
The quality of the formative analysis effort is ultimately determined by the extent to which the obtained data facilitates appropriate revision decisions.

2.8 Complete Intervention Process
Instructional implementation is continued until evaluation of all analysis-units leading to the major terminal competency is completed. It is necessary to ensure that all learners can demonstrate requisite entry behavior before starting a new unit.

2.9 Administer Terminal Performance Measures
Terminal performance measures provide an indication of the overall effectiveness of the total instructional sequence.

2.10 Collect Attitudinal Data
Effectiveness of instruction is often closely related to the attitudes and opinions arising in the learners. Unanticipated outcomes, both beneficial and problematic, should be assessed and considered during program modification.

2.11 Determine Instructional Effects
The effects of an instructional sequence should be viewed in terms of unsatisfied learner needs and of instructional inadequacies in order to permit remediation of both.

2.12 Evaluate Instruction and Performance Measures
One of the most difficult, yet most critical, tasks of the formative evaluator is that of distinguishing between faulty instruction and faulty test items. Such a distinction must be made before revision needs can be identified.

2.13 Specify Revision Needs
The quality of the formative analysis effort is ultimately determined by the extent to which the obtained data facilitates appropriate revision decisions.

2.14 Report Student Achievement
Student achievement data should be added to the cumulative records of each participating learner.

3.0 *Perform Indicated Revisions*
The major purpose of the formative analysis activities, both logical and empirical, is to facilitate efforts to optimize the learning opportunities provided by an instructional sequence.

IMPLEMENTATION PROCEDURES

The Formative Analysis Model was developed to serve the need for specific evaluation procedures that could be applied to a performance-based instructional system. Although no existing model possessed all the desired characteristics for evaluating the Clinical

Teacher system, portions of other models were adopted when appropriate.

The logical analysis procedures were designed for use by personnel with limited training and experience in evaluation. Application of the procedures with skill and thoroughness, however, reduces the time and effort required for empirical analysis.

1.0 *Logical Analysis Activities*
Implement each of the following procedures and perform indicated revisions before continuing field test and empirical analysis activities.

1.1 Evaluate Major Terminal Competency.
Determine whether each competency statement meets the following criteria:
  1.1.1 The competency is clearly consistent with program goals and objectives.
  1.1.2 The competency is not acquired in some other program component.
  1.1.3 Pre-requisite competencies are clearly specified.
  1.1.4 Provisions for demonstrating acceptable proficiency of the competency are included.

1.2 Evaluate Major Performance Objectives.
Judge the objectives in terms of whether:
  1.2.1 The objectives are consistent with each other.
  1.2.2 The objectives are consistent with the major terminal competency.
  1.2.3 Any designated sequence of objectives is logical.
  1.2.4 The objectives meet the *Criteria for Objectives* (see Appendix B)

1.3 Evaluate Complementary Objectives.
Determine whether:
  1.3.1 The objectives are consistent with each other.
  1.3.2 The objectives are consistent with the major performance objectives.
  1.3.3 The objectives meet the *Criteria for Objectives* (see Appendix B)

1.4 Evaluate Interim and Sub-Objectives.
Determine whether:
  1.4.1 Interim and sub-objectives are consistent with each other.
  1.4.2 Interim and sub-objectives are consistent with the major performance objectives.
  1.4.3 Any designated sequence of objectives is logical.
  1.4.4 The sub-objectives meet the *Criteria for Objectives* (see Appendix B)

- 1.5 Evaluate Pre-requisite Competencies.
  Determine whether:
  - 1.5.1 Need for the competency as a prerequisite can be readily established.
  - 1.5.2 The competency is acquired in another program component which is adequately referenced.
  - 1.5.3 Provisions for demonstrating adequate proficiency of the competency are included.
- 1.6 Classify Performance Objectives.
  Implement Step 2.0 of the Florida State University Evaluation Training Center (ETC) Unit Analysis Model.
- 1.7 Analyze Instructional Sequence.
  Implement Step 3.0 of the ETC Unit Analysis Model.
- 1.8 Review Instructional Strategies.
  Implement Steps 4.0 - 4.5 of the ETC Unit Analysis Model.
- 1.9 Review Learning Activities.
  Implement Steps 4.6 & 4.7 of the ETC Unit Analysis Model.
- 1.10 Analyze Resource Allocation.
  Implement Step 5.0 of the ETC Unit Analysis Model.
- 1.11 Evaluate Terminal Performance Measures.
  Determine whether:
  - 1.11.1 The competency measures meet the *Criteria for Performance Measures* (see Appendix B)
- 1.12 Evaluate Progress Measures.
  Determine whether the progress measures:
  - 1.12.1 Meet the *Criteria for Performance Measures* (see Appendix B)
  - 1.12.2 Provide information concerning mastery of each subobjective.
- 1.13 Evaluate Entry Measures.
  Determine whether the entry measures:
  - 1.13.1 Meet the *Criteria for Performance Measures* (see Appendix B)
  - 1.13.2 Provide information concerning mastery of each prerequisite competency.
  - 1.13.3 Provide information concerning mastery of each subobjective.
- 1.14 Specify Revision Needs.
  - 1.14.1 Identify each point in the instructional sequence which *appears* incorrect, inadequate, or troublesome.
  - 1.14.2 Provide an adequate explanation of the nature of the potential difficulty.
  - 1.14.3 List any actions of a corrective nature which may be employed during the instructional revisions.

2.0 *Empirical Analysis Component.*

2.1 Establish Adjunct Analysis-Units.

- 2.1.1 Divide the total instructional sequence into discrete units which can be completed in a single learning session.
- 2.1.2 Sub-divide the analysis-units at points requiring progress checks to determine achievement of interim and sub-objectives.
- 2.1.3 Key the progress measures to the checkpoints.
- 2.1.4 Identify appropriate process indicators.
- 2.1.5 Take proper precautions to ensure that all resources, personnel, instruments, etc., will be available to implement the instruction.

2.2 Perform Entry Operations.

- 2.2.1 Identify potential field test sample.
- 2.2.2 Administer instructional pretests.
- 2.2.3 Based on the pretest data, classify respondents into the following categories:
  - a. Those unqualified for the field test (because they either lack too many entry behaviors or possess the terminal competencies).
  - b. Those who can qualify for the field test with minimal remediation.
  - c. Those qualified for the field test.
- 2.2.4 Provide all necessary remedial instruction.

2.3 Implement Instructional Strategy.
For the sequence encompassed by the analysis-unit, carry out all implementation procedures specified in the instructional design.

2.4 Administer Progress Measures.
Since progress measures will normally be self-administered, only supervision to ensure that students respond at appropriate times will be necessary.

2.5 Collect Process Data.

- 2.5.1 Keep accurate records of all student questions, comments, and non-verbal reactions while completing the instruction.
- 2.5.2 Record information relating to all other previously identified process indicators.

2.6 Determine Instructional Effects.

- 2.6.1 Identify discrepancies between instructional objectives and learner achievement.
- 2.6.2 Identify instructional elements which fail to produce criterion behavior in learners.

2.6.3 Identify learner deficits which are likely to inhibit further progress.

2.7 Specify Revision Needs.

2.7.1 Identify each point in the instructional sequence which *appears* incorrect, inadequate, or troublesome.

2.7.2 Provide an adequate explanation of the nature of the potential difficulty.

2.7.3 List any actions of a corrective nature which may be employed during the instructional revision.

2.8 Complete Intervention Process.

2.8.1 Remediate learner deficits resulting from instructional weaknesses.

2.8.2 Proceed to the next adjunct analysis-unit until all units are completed.

2.9 Administer Terminal Performance Measures.
Collect all posttest achievement data.

2.10 Collect Attitudinal Data.

2.10.1 Administer problem survey.

2.10.2 Administer other attitude instruments deemed necessary.

2.11 Determine Instructional Effects.

2.11.1 Identify discrepancies between instructional objectives and learner achievement.

2.11.2 Identify instructional elements which fail to produce criterion behavior in learners.

2.11.3 Identify learner deficits which are likely to inhibit further progress.

2.12 Evaluate Instruction and Performance Measures.
Implement procedures proposed by Brennan and Stolurow (1971) for formative evaluation of an instructional system.

2.13 Specify Revision Needs.

2.13.1 Identify each point in the instructional sequence which *appears* incorrect, inadequate, or troublesome.

2.13.2 Provide an adequate explanation of the nature of the potential difficulty.

2.13.3 List any actions of a corrective nature which may be employed during the instructional revision.

2.14 Report Student Achievement.
Complete all forms required to certify student mastery of terminal competencies.

3.0 *Perform Indicated Revisions.*
Modify any and all portions of the instructional sequence as indicated by the formative data.

TEACHER TRAINEES

For the purposes of establishing and evaluating the CTM Special Project, fifteen junior level trainees were enrolled each September of four academic years: 1970-71, 1971-72, 1972-73, and 1973-74 (See Appendix A). The trainee population for collecting formative evaluation data varied during the 1972-74 period for the following reasons:

1. 1970-71 marked the initial design of the performance-based competencies and the computer-management system. The 1970-71 class of students participated in these developmental activities and were not in fact trained by this program.
2. The 1971-72 entering class was the first junior trainee population for whom the program and data collection system were operational. This was the class on which summative evaluation data was collected and is presented later.
3. Normal movement of college students into and out of the program resulted in the variance of total number of students enrolled during the 1972-74 data collection period.

Formative data was collected on a total of 41 trainees as they progressed through the performance based instructional modules over six quarters or two academic year periods.

INSTRUMENTATION

Performance Measures

The CT competencies (See Vol. 1, Chapter 4), contain behaviorally explicit and measurable outcomes specified at four criterion levels. These levels are (1) early awareness, (2) knowledge, (3) performance, and (4) product. For each level of objective, measures were developed which were appropriately matched to the outcome and context. These measures are described in Volume 1 as major competency tests, module cluster tests, and module tests. Early awareness objectives required no measurement. Knowledge objectives were measured by objective and essay type tests and student produced products. Performance level objectives, requiring trainee performance with exceptional pupils in actual public school special education resource rooms, were measured by faculty and cooperating teacher observations. Also, this critical level of performance was measured by the instrument constructed for this purpose, The Clinical Teacher Individualized Pupil Plan (See Vol. 1, Chapter 4, pp, 161-165). This composite measure of the major Clinical Teacher competencies (observation, diagnosis, intervention, and evaluation) assesses the range of teacher behaviors required to individualize instruction for mildly handicapped children. This instrument is also used to measure and record the pupil gain.

Attitudinal Measures

The project team was also concerned with trainee attitudes towards the content and process of instruction as they progressed through the curriculum and acquired their competencies. Therefore two attitudinal surveys were developed to assess trainee perceptions on two parameters. A Survey of Field Experiences (See Appendix C) scale was developed and administered several times. The field work constitutes a substantial portion of the curriculum and the trainees devoted considerable time in local public schools while acquiring their competencies. In addition, a Survey of Problems and Benefits Analysis instrument was developed to assess trainee attitudes about the course work and knowledge phases of the program (See Appendix D).

FIELD EXPERIENCES

A critical element in a performance-based instructional system is the demonstration of competencies in realistic environments. In teacher education, these "real world" situations are public school classrooms. For the purposes of this Project, the classes selected were special education resource rooms for the mildly handicapped on the elementary level.

As with other parts of this individualized curriculum, trainees were matched with appropriate field experiences which enabled the student to demonstrate competency on specified objectives. The objectives of the junior level systematic observation required different field settings from those necessary for achieving senior level diagnostic and intervention objectives. The master's level internship sites where the student could independently demonstrate the composite clinical teaching skills necessitated a variety of resource rooms throughout the state.

Juniors spend one morning a week in seminars and three mornings a week systematically observing exceptional and "normal" children aged 3 to 12 years. Field placements for juniors are in two local early childhood education centers and three open-space elementary schools which have resource rooms with the remainder of students in regular classes. Using the sequences of desired behaviors as a framework, junior trainees pinpoint and record specific pupil behavior.

Seniors also spend one morning a week in seminars, but have four, rather than three mornings in the field, demonstrating competencies in observation, diagnosis, intervention and evaluation in three Leon

County public schools. After completion of the diagnostic competency, the senior contracts with the Clinical Professor to produce "mini-gains" (small behavioral improvements) in four handicapped children. One of these contracts must be for producing mini-gains in pre-reading, one in reading, and the third and fourth in social, math or language areas. The trainee diagnoses the child before beginning work with him or her, and when ready, asks the Clinical Professor or the Program Director to come in and observe his interaction with the child. The Clinical Professor then assesses the trainee's performance in completing his mini-gains contract as presented in the Clinical Teacher Individualized Pupil Plan.

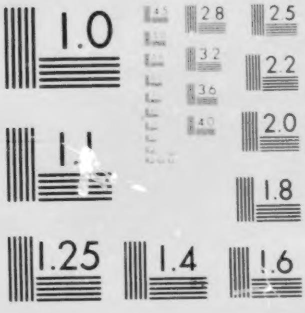
The master's internship is designed so trainees can perform almost independently all the competencies of the Clinical Teacher, produce significant gains in exceptional children, and evaluate the effectiveness of their instructional strategies. Selected resource rooms throughout the state of Florida for mildly handicapped children with varying disabilities are used for this final competency test of clinical teaching.

DATA COLLECTION

Data collection procedures were designed for both performance and attitudinal information. Performance data on the modules were recorded on the CTM Project-designed computer management system. Attitudinal data was collected anonymously b the evaluator with survey instruments.

Computer Management System

The program used a computer to store information and chart the progress of individual students. An adaptation of the Multiple Access and Retrieval System (MARS 2) on a CDC 6500 computer provided easy access for both faculty and students via an off-line cathode-ray tube with off-line printers located on-campus and in the program's administrative offices at the Educational Research Institute (See Appendix E). Student or faculty members had hard copy after scanning the student's record on the tube and selecting the information desired. Compatibility with the total University system made access possible at 41 other campus locations. Data was entered weekly for each student via a Module Transaction Log made up of three forms which report either module entry, transaction, or completion. The student completed the top half of the appropriate form for each module he worked on during the week. The bottom half of the form was used by the Clinical Professor for entering the products completed, proficiency scores, student learning styles, and instructional strategy used. Relevant information was printed out in three reports:


1.0
4.5
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

Task Characteristics—module number, competency, objectives, levels of performance, resources available, standard proficiency, and standard time for the module.

Learner Characterstics—information on learner styles and individualized instructional strategies.

Performance—entry date, resources used, products, proficiency level, completion data, and actual time taken.

The system sorted for individual modules or summarized all modules worked on by a student to produce a progress capsule.

In addition to student progress, the computer may be used to manage the sequences of desired behaviors for exceptional children (language, pre-reading, reading, and mathematics). Master's-level interns were able to document the produced skills and search for interactions between aptitudes of learners and treatments. In addition, the computer could be used to make recommendations on resources for individual students, based on their personal learning styles.

Attitudinal Surveys

The survey instruments were administered periodically during the formative evaluation phase. The information obtained was manually scored and interpreted by the evaluator. The surveys were developed to assess trainee impressions of the overall program; the items represented the following major categories of program attributes: (1) general program characteristics, (2) instructional objectives, (3) instructional resources and activities, (4) performance assessment, and (5) other characteristics of their field experiences.

SUMMATIVE EVALUATION

OBJECTIVES

1. To increase the probability that graduates of the Clinical Teacher training program will be able to bring about desired pupil changes, the evaluation will:
    1.1 Establish terminal performance standards for qualification as a Clinical Teacher.
    1.2 Ensure that graduates of the training program demonstrate requisite Clinical Teacher competencies prior to certification.
2. To determine if qualified Clinical Teachers can bring about the desired behavioral changes in the target pupil population; such determination requires:

2.1 Formulation of an experimental design which has the capability of demonstrating differences between pupil gains produced by traditionally trained teachers and by Clinical Teachers.

2.2 Identification of appropriate samples of teachers and pupils for testing the ultimate effectiveness of the Clinical Teacher Model.

2.3 Implementation of experimental procedures for determining the ultimate effectiveness of the Clinical Teacher Model.

DESIGN

The Project staff conducted a three day workshop to develop a summative evaluation research design appropriate for determining the effectiveness of the Clinical Teacher Model. The agenda was planned to brainstorm the various conceptual and methodological problems involved in studying the effects of teaching. The conference participants[1] were selected for their expertise in research on teaching in both regular and special education.

The outcomes were detailed recommendations for conducting the summative evaluation and a research design for analyzing the results. The recommendations were:

1. Administer standardized pretest and posttest for all pupils in the target population taught by Clinical Teacher graduates.
2. Arrange for and conduct the same measurement procedures for a similar group of children within the target population taught by other special education teachers.

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3. Describe and contrast the two targeted populations of exceptional children and their academic gain scores using general regression methods.
4. Describe the relationship between the use of clinical teaching competencies and the gains produced in exceptional children.

In order to analyze the information, it was recommended that the CTM Project employ a "quasi-experimental . . . Nonequivalent Control Group Design" (Campbell and Stanley, 1963, pp. 217-220). While recognizing that the outcome of the evaluation of the CTM Project was to show the value or the effects of the Clinical Teachers on the exceptional children, the conference participants strongly believed that the addition of a comparison group would make the findings more useful and meaningful to researchers in teacher education.

POPULATION

Eight Clinical Teachers who completed the program in June, 1974, and eight comparison teachers from the Duval County, Florida, public school system constituted the summative evaluation research population. Of the eight CTM Project graduates, one was employed in a self-contained special class for emotionally disturbed children and was unable to obtain pre-test scores. Therefore, this Clinical Teacher was deleted from the summative phase. The seven Clinical Teachers, all having been assigned to teach mildly handicapped children, were employed in four states. The eight comparison resource room teachers were selected by the Director of Special Education, Duval County School Board. The reason for this selection was that the exceptional pupils assigned to these resource rooms by the county approximated the targeted population of the study.

The children for both samples were those identified and placed in these special education resource rooms. The programs were generally under the categorical labels of mental retardation, learning disabilities, emotionally disturbed, and combinations of these categories.

The pupil population totaled 98 in the Clinical Teacher group and 75 in the comparison group at pretest. At posttest the sample size was 88 and 59 respectively for each group. This reflected a loss of ten pupils in the Clinical Teacher group and 16 in the comparison group. Of the ten pupils lost in the Clinical Teacher group, five were mainstreamed, and were not available for posttesting, while the other five were lost due to their leaving the school district. Of the sixteen pupils lost in the comparison group, seven were re-assigned to other schools within the district, six moved out of the area and three were absent from school during the posttest period. This information on sample size is presented in Table 1.

TABLE 1
Summative Evaluation Sample Population

	Pre-test (Oct.74) No. Pupils	Post-test (May 75) No. Pupils	Attrition No. Pupils
Clinical Teachers			
N = 7	98	88	10
Comparison Teachers			
N = 8	75	59	16

INSTRUMENTATION

The Metropolitan Achievement Test (See Appendix F) was selected as the standard measure of pre- and posttest achievement scores in total reading and total arithmetic for both Clinical Teacher and Comparison groups. The tests were administered in the third week of October, 1974, and the third week in May, 1975. This test in form F (pre) and H (post) on Primer, Primary I, Primary II, Elementary, and Intermediate levels was chosen due to its generalized acceptance for reliability and validity. The test level administered to each pupil was selected based upon expected achievement range rather than chronological age. The administration of these tests, both pre and post, was performed by the Clinical Teachers themselves and by four master's level Clinical Teacher Trainees for the Comparison group. These master's trainees had demonstrated diagnostic competencies during their senior year of preparation.

The Clinical Teacher Competency Rating Scale (See Appendix G) was developed to assess how many of the competencies each Clinical Teacher believed he or she had used. This instrument was administered November 15, 1974, and May 15, 1975.

TREATMENT

The Clinical Teachers utilized the specified competencies in the individualized instructional system. This system is displayed in Volume 1. Essentially, it is a diagnostic prescriptive strategy which assesses pupil entry levels, specifies learning objectives, matches instructional resources to the learner and task characteristics, and evaluates the effects of instruction.

DATA COLLECTION

All data from the Clinical Teachers was received by mail on achievement test and survey forms provided by the Project. The data on the Comparison group was obtained by the four Clinical Teacher Trainees during pre and post on-site visits. Test results were verified by the Project Evaluators from the raw scores recorded on the test booklets. These data were then converted to standard scores and grade equivalents. This information was entered on data charts, key punched, and analyzed at the Florida State University Computing Center.

LIMITATIONS

While cognizant of the inherent limitations of research on teaching in general and in the use of quasi-experimental designs with non-randomized groups in particular, the investigators did not view this as a major problem. This belief was based upon the fact that the goal of the Project was to document the *effectiveness* or *value* of an innovative instructional system. The use of evaluation strategies, with an appropriate research design, provided the procedures for accomplishing the goals of the CTM Special Project.

CHAPTER 4

FORMATIVE EVALUATION RESULTS

Contemporary evaluation strategies enable a curriculum team to formulate goals, specify objectives, design instruction to produce these learning outcomes, and measure student progress in attaining mastery of the objectives. A critical element within the over-all evaluation effort is the measurement of the impact of the new curriculum on students on two parameters:

(1) performance—proficiency and efficiency,
(2) attitudes—how did the students feel as they progressed through the curriculum and attained mastery?

This chapter presents both performance and attitudinal data collected on junior, senior, and master's level Clinical Teacher Trainees during the two year academic period 1972-74. First, composite performance data is presented for the entire group of trainees as documentation of program effectiveness. Second, 1972-73 performance and attitudinal data is presented, which was collected for the purpose of conducting the revision activities necessary in establishing and field-testing a prototype curriculum.

Of particular note was the use of the Clinical Teacher Model Project-designed computer management system for the storing and retrieval of the formative data for precise monitoring of the many and varied curricular elements. The collection, analysis, and use of this information for the students by module and by class level would not have been possible without the utilization of this instructional technology.

COMPOSITE DATA

The data from the formative phase was based on information obtained from September, 1972, until the end of the winter quarter in March, 1974. There are two reasons the cutoff point of March, 1974, was chosen. The first was that the system had been in operation for a long enough period of time to provide meaningful data on which to base curricula revisions; and secondly, the master's students who were the population for the summative phase of the project were approaching graduation.

Although the program was under continuous evaluation, and revisions were made as the program proceded, the data analysis provided the bases for decision making. Four aspects of the data were critical:

1. The proficiency scores obtained by the trainees at all class levels.
2. The time (in hours) the trainees used to complete each module.
3. The resources used by the trainees.
4. Possible relationships between time used and resources used, and the proficiency scores obtained by the trainees.

Based on those four main aspects, the following questions were posed:

1. Is there any difference among class levels (masters, seniors, and juniors) in the mean performance of the trainees on each module? How large are the standard deviations for each module at each class level, and what is the median score for each module at each class level?
2. Are there differences apparent in the average amount of time used for each module at each class level, and how does it compare to the standard time allotted for each module?
3. Is there any difference in the average proportion of available resources used among the three class levels?

4. Is there any relationship between the proportion of available resources used by the trainees and the proficiency scores obtained?
5. Is there any relationship between the amount of time used by the trainees and the proficiency scores obtained?

The determination of curriculum effectiveness was documented as follows:

1. All three classes of trainees achieved mastery level (above 80%) for all modules. (See Appendix H)
2. The standard deviations are correspondingly low with very small differences among modules and by class level of trainees.

Additional data indicated that the time required to achieve mastery, resource utilization by individual trainee, and relationships among mastery, time, and resource, varied significantly among trainees.

PROFICIENCY SCORES

Table 2, Summary of Clinical Teacher Trainee Proficiency Scores presents the data for the period 1972-74.

TABLE 2
TRAINEE PROFICIENCY SCORES

MODULE NUMBER	ALL CLASS LEVELS				MASTERS' CLASS				SENIOR CLASS				JUNIOR CLASS			
	N	$\overline{X}$	SD	Median	n_1	$\overline{X}_1$	SD_1	$Median_1$	n_2	$\overline{X}_2$	SD_2	$Median_2$	n_3	$\overline{X}_3$	SD_3	$Median_3$
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	31	94.4	7.2	97.7					14	96.3	6.8	98.0	17	92.1	7.3	95.0
2	30	96.3	4.3	97.5					14	97.5	3.8	98.1	16	95.6	4.8	96.5
3	30	95.2	6.6	97.8					14	96.4	6.0	98.6	16	94.1	6.6	95.8
20	11	100.0	0.0	100.0					11	100.0	0.0	100.0				
21	15	85.3	10.6	86.0					14	84.3	10.2	85.0	1	100.0	0.0	100.0
22	14	89.1	7.2	88.9					14	89.1	7.2	88.9				
23	23	96.5	7.1	98.6	9	97.8	6.7	98.8	14	95.7	7.6	98.0				
24	24	96.0	6.8	97.9	10	99.0	3.2	99.4	14	93.1	7.9	96.3				
25	20	98.9	2.9	99.6	9	99.4	1.7	99.7	14	98.6	3.6	99.2				
26	20	100.0	0.0	100.0	9	100.0	0.0	100.0	11	100.0	0.0	100.0				
27	20	98.5	3.4	99.5	10	98.5	3.4	97.4	10	98.6	3.8	99.2				
28	18	98.7	3.5	99.2	10	98.0	4.2	98.8	10	100.0	0.0	100.0				
29	18	99.4	2.4	99.7	9	98.9	3.3	99.4	9	100.0	0.0	100.0				
30	18	99.3	2.6	99.6	9	100.0	0.0	100.0	9	98.3	4.1	99.0				
31	16	100.0	0.0	100.0	8	100.0	0.0	100.0	8	100.0	0.0	100.0				
32	18	98.8	3.4	99.2	9	100.0	0.0	100.0	9	97.1	4.9	98.0				
40	20	98.3	3.6	99.2	10	97.0	4.3	98.9	10	100.0	0.0	100.0				
41	25	91.1	12.5	96.3	8	95.6	4.9	97.5	8	90.8	12.8	97.5	9	87.2	16.4	93.1
42	19	98.5	3.8	99.1	9	97.8	4.4	98.6	9	100.0	0.0	100.0	1	100.0	0.0	100.0
43	16	97.2	4.4	98.2	8	96.9	4.5	98.5	8	100.0	0.0	100.0				

LEGEND: N = Number of trainees at all class levels
n_1 = Number of trainees at the master's level
n_2 = Number of trainees at the senior level
n_3 = Number of trainees at the junior level
$\overline{X}$ = Mean proficiency for all class levels combined
$\overline{X}_1$ = Mean proficiency for masters
$\overline{X}_2$ = Mean proficiency for seniors
$\overline{X}_3$ = Mean proficiency for juniors
SD = Standard deviation

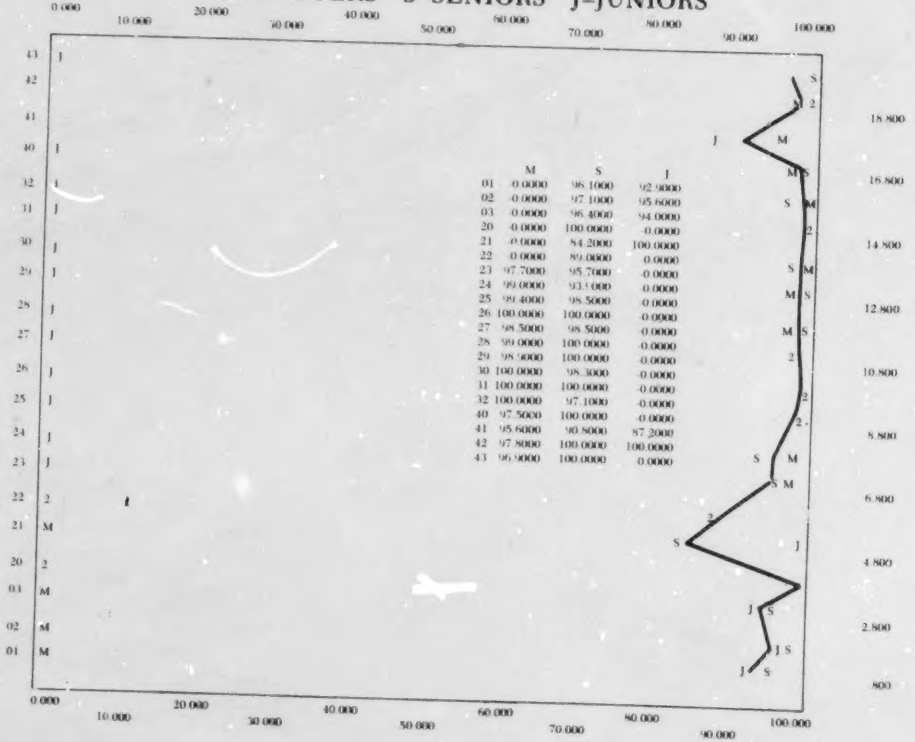
Figure 6 plots the mean proficiency score obtained at each class level plotted against modules (modules on the vertical axis, proficiency score on the horizontal axis). The plot reflects graphically part of the information provided on Table 3.

Below, the modules are ranked according to average proficiency scores obtained across class levels, Rank 1 being the lowest average scores for those modules, Rank 6 the highest.

Standard proficiency for each module was 80; the highest possible score to be obtained was 100.

Rank	*Modules*
1	22 41
2	01 21 03
3	02 24
4	23 27 32 40 42 43
5	25 30
6	20 26 28 29 31

FIGURE 6: MODULE NUMBER VS. MEAN PROFICIENCY (FOR ALL MODULES)
M=MASTERS S=SENIORS J=JUNIORS



	M	S	J
01	-0.0000	96.1000	92.9000
02	-0.0000	97.1000	95.6000
03	-0.0000	96.4000	94.0000
20	-0.0000	100.0000	-0.0000
21	-0.0000	84.2000	100.0000
22	-0.0000	89.0000	-0.0000
23	97.7000	95.7000	-0.0000
24	99.0000	93.9000	-0.0000
25	99.4000	98.5000	-0.0000
26	100.0000	100.0000	-0.0000
27	98.5000	98.5000	-0.0000
28	99.0000	100.0000	-0.0000
29	98.9000	100.0000	-0.0000
30	100.0000	98.3000	-0.0000
31	100.0000	100.0000	-0.0000
32	100.0000	97.1000	-0.0000
40	97.5000	100.0000	-0.0000
41	95.6000	90.8000	87.2000
42	97.8000	100.0000	100.0000
43	96.9000	100.0000	0.0000

Interpretation of these data strongly supports the effectiveness of the performance-based curriculum in producing the Clinical Teacher competencies in all of the trainees in the program. In addition, the highly variable factors of time required to attain proficiency, instructional resource utilization, the relationship of these factors to performance, and the relationship between time and proficiency clearly reaffirms the concept of individual differences among learners.

TIME REQUIRED FOR MASTERY

Table 3 depicts the average time (in hours) used to complete each module by the trainees. The standard time for each module and the standard deviations of the time used are also given.

The time utilization varies greatly across class levels, and no particular trend is apparent regarding the standard time given; only on modules 2, 3, and 41 did the standard time set substantially exceed the actual time used.

The fact that there are such large discrepancies between standard time and actual time used can possibly be attributed to the trainees' not including the time used for mandatory aspects of the modules such as seminars, fieldwork, and videotapes. A revision of this aspect of the program took this fact into consideration.

TABLE 3
Time Used (In Hours) To Complete Each Module

MODULE NUMBER 1	STANDARD TIME (HRS) 2	ALL CLASS LEVELS N 3	ALL CLASS LEVELS MEAN TIME 4	ALL CLASS LEVELS S.D. 5	MASTERS' LEVEL n_1 6	MASTERS' LEVEL MEAN TIME 7	MASTERS' LEVEL S.D. 8	SENIOR LEVEL n_2 9	SENIOR LEVEL MEAN TIME 10	SENIOR LEVEL S.D. 11	JUNIOR LEVEL n_3 12	JUNIOR LEVEL MEAN TIME 13	JUNIOR LEVEL S.D. 14
1	40	31	28.0	11.5				14	24.9	15.2	17	21.4	7.3
2	80	31	27.8	20.6				14	34.9	27.6	17	21.9	9.2
3	80	31	39.1	19.7				14	37.8	25.5	17	40.0	13.9
20	1	10	6.3	6.7				10	6.4	6.7			
21	60	25	48.2	39.9				13	81.0	27.1	12	22.7	6.4
22	20	15	20.6	6.1				13	23.0	12.9	2	2.3	1.8
23	30	23	24.3	18.4	9	11.4	7.0	14	32.6	18.8			
24	30	24	28.2	16.0	10	30.2	16.2	14	26.6	16.4			
25	16	22	12.8	5.9	9	11.9	6.2	13	13.3	5.8			
26	4	19	8.3	3.3	9	9.0	4.3	10	7.8	2.2			
27	4	15	5.7	2.6	9	6.0	2.6	6	5.4	2.8			
28	4	14	8.4	[illegible]	9	9.0	6.0	5	7.3	2.8			
29	4	15	7.7	6.6	7	5.9	4.2	8	9.2	8.1			
30	80	16	67.3	54.1	9	46.8	26.4	7	93.9	10.3			
31	20	11	17.2	13.0	8	13.3	11.8	3	27.5	12.0			
32	30	15	38.1	25.4	9	36.7	27.0	6	40.2	25.1			
40	30	13	25.8	16.1	9	30.3	15.3	4	15.6	14.9			
41	70	23	30.7	20.8	8	35.1	47.2	6	29.4	28.8	9	27.6	10.4
42	20	13	24.9	18.1	8	19.4	16.7	4	31.1	20.1	1	44.0	0.0
43	80	11	67.6	63.3	7	58.4	48.1	4	83.5	91.2			

LEGEND: N = Number of trainees at all class levels
n_1 = Number of trainees at the master's level
n_2 = Number of trainees at the senior level
n_3 = Number of trainees at the junior level
SD = Standard Deviation

Figure 7 plots the mean time (in hours) taken to complete a module at each class level. On the left hand side of the plot (vertical axis) is the number for each module; the horizontal axis refers to the average time (in hours) taken by the trainees to complete the respective module. Inserted in the plot is the summary information of what the plot depicts.

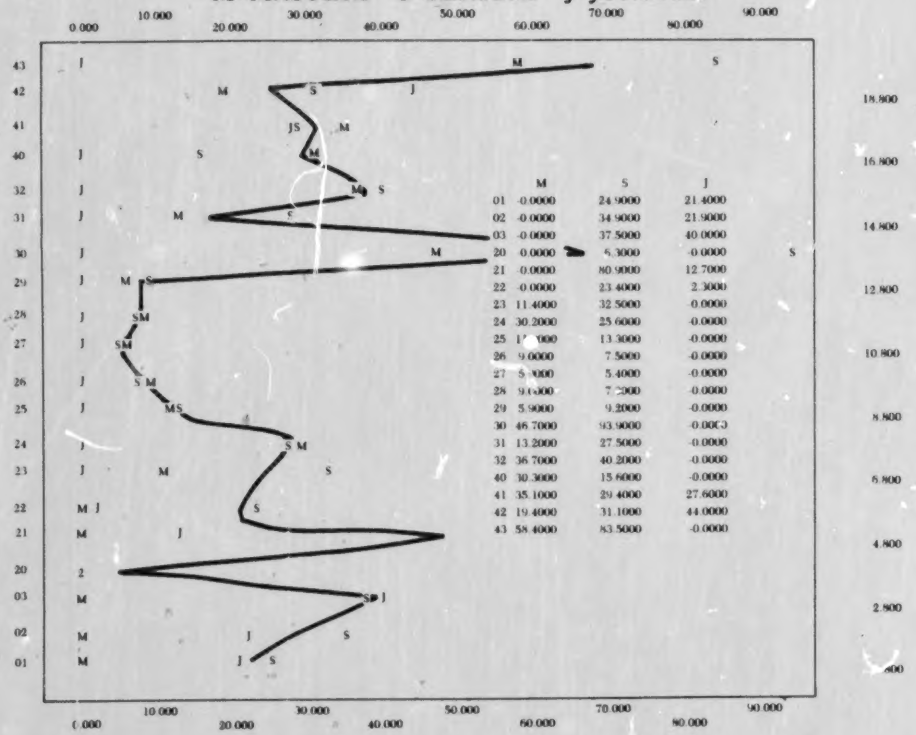
Below, the modules are ranked according to the amount of time taken for each module. The average time refers to all class levels combined. For clarification the standard time for each module has been included.

The ranking is as follows: Rank 1 refers to the modules which took the least amount of time; Rank 8, to the modules that took the most time.

(The number in parentheses refers to the standard time).

Rank	*Modules*			
1	20 (1)	27 (4)		
2	26 (4)	28 (4)	29(4)	
3	22 (20)	25 (10)		
4	01 (40)	23 (30)	31(20)	40(30)
5	02 (80)	24 (30)	41(70)	42(20)
6	03 (80)	32 (30)		
7	21 (60)			
8	30 (80)	43 (80)		

FIGURE 7: MODULE NUMBER VS. MEAN TIME TAKEN PER MODULE (FOR ALL MODULES)
M=MASTERS S=SENIORS J=JUNIORS



	M	S	J
01	-0.0000	24.9000	21.4000
02	-0.0000	34.9000	21.9000
03	-0.0000	37.5000	40.0000
20	0.0000	6.3000	-0.0000
21	-0.0000	80.9000	12.7000
22	-0.0000	23.4000	2.3000
23	11.4000	32.5000	-0.0000
24	30.2000	25.6000	-0.0000
25	[illegible]	13.3000	-0.0000
26	9.0000	7.5000	-0.0000
27	[illegible]	5.4000	-0.0000
28	9.0300	7.2000	-0.0000
29	5.9000	9.2000	-0.0000
30	46.7000	93.9000	-0.0000
31	13.2000	27.5000	-0.0000
32	36.7000	40.2000	-0.0000
40	30.3000	15.6000	-0.0000
41	35.1000	29.4000	27.6000
42	19.4000	31.1000	44.0000
43	58.4000	83.5000	-0.0000

PROPORTIONS OF AVAILABLE RESOURCES USED

The mean proportions of the available resources used by the trainees and the standard deviations are listed in Table 4. Again, values are given for all class levels combined as well as each individual class level. Following this table, a listing of the resources which have been used infrequently by the trainees is presented on pages 103–104.

At no class level were all the resources used for any given module. The resources most infrequently used are listed below.

The effect resource utilization had on the proficiency scores is presented in the correlation tables that follow the list of infrequently used resources.

TABLE 4
Proportion Of Resources Used

Module Number	ALL LEVELS			MASTER'S LEVEL			SENIOR LEVEL			JUNIOR LEVEL		
	N	Mean Proportion	S.D.	n_1	Mean Proportion	S.D.$_1$	n_2	Mean Proportion	S.D.$_2$	n_3	Mean Proportion	S.D.$_3$
1	2	3	4	5	6	7	8	9	10	11	12	13
1	31	.63	.12				14	.64	.17	17	.63	.07
2	31	.15	.16				14	.79	.15	17	.72	.16
3	31	.58	.12				14	.66	.10	17	.51	.08
20	3	.33	.01				3	.33	.00			
21	23	.42	.21				11	.56	.16	12	.27	.13
22	15	.55	.22				13	.60	.19	2	.25	.00
23	23	.54	.18	9	.44	.12	14	.61	.18			
24	24	.53	.16	10	.51	.07	14	.54	.21			
25	22	.28	.13	9	.47	.09	13	.15	.06			
26	16	.41	.10	9	.45	.11	7	.38	.08			
27	16	.49	.19	9	.57	.19	7	.38	.13			
28	15	.40	.16	10	.43	.17	5	.35	.14			
29	13	.35	.14	6	.36	.16	7	.35	.12			
30	15	.72	.28	9	.60	.28	6	.80	.17			
31	9	.30	.16	6	.22	.08	3	.44	.20			
32	13	.60	.21	8	.59	.24	5	.60	.15			
40	11	.38	.23	7	.31	.20	4	.50	.26			
41	23	.41	.24	8	.21	.07	6	.42	.21	9	.59	.21
42	11	.68	.25	6	.50	.00	4	.88	.25	1	.99	.00
43	11	.86	.23	7	.79	.27	4	.99	.00			

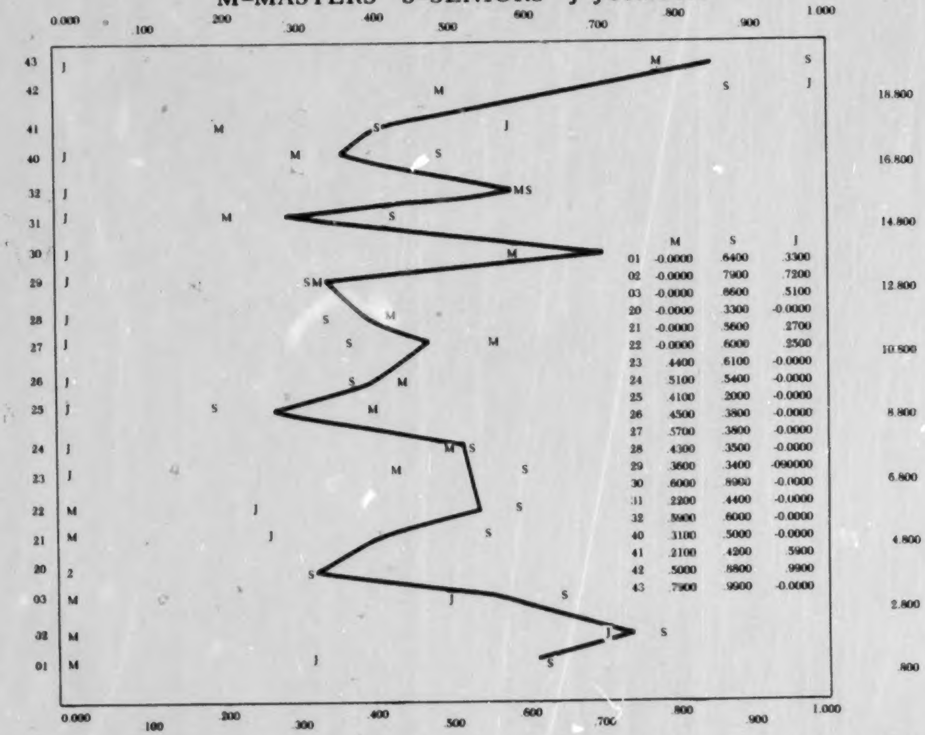
LEGEND: N = Number of Trainees at all Class Levels
n_1 = Number of Trainees at the Master's Level
n_2 = Number of Trainees at the Senior Level
n_3 = Number of Trainees at the Junior Level
SD = Standard Deviation
Mean Prop. = Mean Proportion of Available Resources Used

Figure 8 plots information about the proportion of available resources used for each module. The proportions are listed on the horizontal axis, the modules on the vertical axis.

Below is a ranking of the modules according to the average proportion of available resources used by the trainees. The modules for which the smallest proportion of resources were used occupy rank 1, the modules for which the highest proportion of resources were used occupy rank 6.

Rank	*Modules*
1	20 25 29 31
2	01 21 22 26 28 40 41
3	23 24 27
4	03 32
5	02 30 42
6	43

FIGURE 8: MODULE NUMBER VS. MEAN PROPORTION OF RESOURCES USED (FOR ALL MODULES)
M=MASTERS S=SENIORS J=JUNIORS



	M	S	J
01	-0.0000	.6400	.3300
02	-0.0000	7900	.7200
03	-0.0000	.6600	.5100
20	-0.0000	.3300	-0.0000
21	-0.0000	.5600	.2700
22	-0.0000	.6000	.2500
23	.4400	.6100	-0.0000
24	.5100	.5400	-0.0000
25	.4100	.2000	-0.0000
26	.4500	.3800	-0.0000
27	.5700	.3800	-0.0000
28	.4300	.3500	-0.0000
29	.3600	.3400	-090000
30	.6000	.8900	-0.0000
31	.2200	.4400	-0.0000
32	.5900	.6000	-0.0000
40	.3100	.5000	-0.0000
41	.2100	.4200	.5900
42	.5000	.8800	.9900
43	.7900	.9900	-0.0000

INFREQUENTLY USED RESOURCES

This list includes resources that have been used by one-half to one-third of the trainees. The resources appearing in parentheses were used by one-third or fewer of the trainees.

It can be assumed that mandatory resources were utilized by all trainees. These resources include: seminars, fieldwork, video tapes, and college courses. For the sake of completeness, these resources were included in the table, but are marked by an asterisk in order to discriminate them from the optional resources infrequently used by the trainees.

Module Number	Names of Resources
01	(Group Committees)
	(Seminars)*
	(Video)*
02	(Group Committees)
	(Seminars)*
03	Mager
	(Schwartz-2)
	(Group Committee)
	(Seminar)*
20	(CT Behavioral Objectives)
	(Bibliography)
	(Seminars)*
21	(Kerlinger)
	(Psy 317)*
	(Multi Media)
	(Video)*
22	(Smith)
	(Smith)
	(Seminar)*
23	(CAI)
	(Video)*
	(Seminar)*
24	(Ferinden)
	(CAI)
	(Video)*
	(Seminar)*
25	(Frostig-2)
	(CAI)
	(Video)*
	(Seminar)*
26	(CAI)
	(Video)*

Module Number	Names of Resources
	(Seminar)*
27	(Video)*
28	(Video)*
	(Seminar)*
29	(CAI)
	(Video)*
	(Seminar)*
31	(Blackman)
	(Edling)
	(Hunt)
	(Schwartz)
	(Seminar)*
32	(MCTP)
40	(Duncan)
	(Nichols)
	(MFTES)
	(Seminar)*
41	Allen
	Becker
	(Cruickshank)
	Homme
	(Kotick)
	Oleary
	(Whelan)
	(Seminar)*
42	Contract

RELATIONSHIPS BETWEEN RESOURCES USED AND PROFICIENCIES OBTAINED

The following table shows the correlation coefficients between the proportion of available resources used by all of the trainees included in this phase of the program and the average proficiency scores obtained for each module.

The correlations were arrived at by using the Pearson Product - Moment correlation coefficient. For modules 20, 26 and 31, and 40 no correlation coefficient could be obtained, since all the students achieved a proficiency score of 100 which did not yield any variance (variance is necessary for the calculation of the Pearson Product-Moment correlation coefficient). These cases appear in the tables as blank spaces.

The correlation coefficients across the modules range widely, from

— .418 for module 26 to .674 for module 21. This instability of the correlation coefficients can probably be attributed to the relatively small number of students, which does not allow for averaging out of the resource utilization. Another cause of this variation in the correlation coefficients might be the non-reporting by some students of the mandatory resources, as well as individual differences between students.

TABLE 5
Correlation Coefficient Between
Proportion Of Resources Used And Proficiency

Module Number	N	*Correlation Coefficient*
1	31	.328
2	31	-.014
3	31	.130
20	3	——
21	25	.674
22	15	.442
23	23	-.269
24	24	-.418
25	22	.204
26	16	——
27	15	-.144
28	14	-.294
29	13	.318
30	15	.087
31	9	——
32	13	-.009
40	11	——
41	23	.107
42	11	.074
43	11	-.386

RELATIONSHIP BETWEEN TIME AND PROFICIENCY

Table 6 provides the Pearson Product-Moment correlation coefficients between the student proficiency and the time (in hours) used by the students to complete a module. The spaces for modules 20, 26, and 31 are left blank since no correlation coefficient could be obtained due to the uniformity of scores. The range of the correlation coefficients goes from — .255 for module 43 to .621 in module 21. These data show that some students who used very few hours on a module scored very high, while some students who used the most time achieved a low proficiency score. Again, this range may be attributed to the relatively small number of students and the individual differences among students and their various learning styles.

TABLE 6
Correlation Coefficient
Between Time And Proficiency

Module Number	*N*	*Correlation Coefficient*
1	31	.256
2	30	.003
3	30	.140
20	10	——
21	15	.621
22	14	.481
23	23	-.121
24	24	.026
25	22	.288
26	19	——
27	15	.391
28	14	.420
29	15	.262
30	15	.336
31	11	——
32	15	.003
40	13	.108
41	23	.199
42	13	.117
43	9	-.255

INDIVIDUAL STUDENT PERFORMANCE

The following tables present comprehensive information about the individual trainees by module. This information was accumulated from 1972 until the end of winter quarter of 1974. Individual differences between students become especially clear when examining this information. The tables are organized as follows:

Column	*Column Name*
1	Class level
2	Proportion of resources used
3	Name
4	Module number
5	Time used in hours
6	Proficiency attained
7	Number of resources used
8	Number of days
9	Names of resources used
10	Number of resources available
11	Names of resources available

For a more complete understanding and appreciation of how this information relates to the Clinical Teacher Competencies, the reader is referred to Volume 1, Chapter 4.

TABLE 7
Resources Utilization By Module By Student

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Cole (1.00)
B = Itard (.97)
C = Kanner (1.00)
D = Talbot (.84)
E = Video Tape (.42)
F = Seminars (.19)
G = Group Committees (.00)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
2	.75	BREZIN, MICHAEL J.	1	23.5	100	6		ABCDE H	8	ABCDEFGH
2	.29	CHAMBERS, WILLIAM N.	1	14.2	85	2	223	A C	7	ABCDEFG
2	.86	CHOPPIN, SUZANNE M.	1	46.0	100	6		ABCDEF	7	ABCDEFG
2	.56	COHEN, ADRIENNE	1	63.5	100	5	19	ABC HI	9	ABCDEFGHI
2	.50	COLONNA, KARLA	1	12.3	100	4		ABCD	8	ABCDEFG
2	.86	GRIFFIN, DIANNE	1	23.0	90	6		ABCDEF	7	ABCDEFG
2	.71	MALTBY, JUDY L.	1	30.0	100	5	112	ABCD F	7	ABCDEFG
2	.71	MATHEWS, STELLA	1	11.0	100	5	15	ABCD F	7	ABCDEFG
2	.43	MURPHY, THERESA	1	10.0	80	3		ABC	7	ABCDEFG
2	.71	OLSON, DEBBIE	1	37.0	100	5		ABCD F	7	ABCDEFG
2	.57	PHILLIPS, AMY	1	14.5	100	4	72	ABCD	7	ABCDEFG
2	.57	STONE, JUDY	1	19.0	100	4		ABCD	7	ABCDEFG
2	.57	STYGAR, THOMAS S.	1	27.0	90	4	252	ABC E	7	ABCDEFG
2	.86	WILLIAMS, CHERYL L.	1	18.0	100	6	128	ABCDEF	7	ABCDEFG
3	.57	BAILEY, SUSAN	1	14.0	100	4	28	ABC E	7	ABCDEFG
3	.57	BOERKE, THOMAS	1	26.4	85	4	20	ABCD	7	ABCDEFG
3	.71	BRAND, JOYCE	1	19.5	95	5	14	ABCDE	7	ABCDEFG
3	.71	BROWDY, LARRY	1	20.0	80	5	20	ABCDE	7	ABCDEFG
3	.71	BRYAN, SANDY	1	29.0	100	5	23	ABCDE	7	ABCDEFG
3	.71	DUNK, NANCY	1	21.0	100	5	21	ABCDE	7	ABCDEFG
3	.57	FERNANDEZ, ROBERT Y.	1	9.7	80	4	16	ABCD	7	ABCDEFG
3	.71	MAYNE, JACQUELINE D.	1	18.0	100	5	20	ABCDE	7	ABCDEFG
3	.57	MILLER, BARBARA	1	15.0	95	4	10	ABCD	7	ABCDEFG
3	.57	REID, ELIZABETH J.	1	16.3	100	4	16	ABCD	7	ABCDEFG
3	.57	ROOKS, MARSHA	1	19.3	90	4	20	ABCD	7	ABCDEFG
3	.57	SIBERT, KATHLEEN	1	17.5	85	4	10	ABCD	7	ABCDEFG
3	.71	SIGNELL, CORINNE	1	27.3	95	5	20	ABCDE	7	ABCDEFG
3	.57	STRAUSS, JEANNIE C.	1	28.5	95	4	14	ABCD	7	ABCDEFG
3	.71	THIEL, KEN	1	24.0	85	5	19	ABCDE	7	ABCDEFG
3	.57	WEINSTOCK, DENISE R.	1	18.0	100	4	16	ABCD	7	ABCDEFG
3	.57	WHITE, SHARON L.	1	40.5	95	4	27	ABCD	7	ABCDEFG

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Bateman (.94)
B = Binet (.90)
C = Bruckner (.90)
D = Fernald (.84)
E = Jenkins (.87)
F = Kirk (.97)
G = Smith (.97)
H = Witmer (.81)
I = Seminars (.29)
J = Group Committees (.00)

Class level	Prop. of resources used	Name	Module Number	Time used in hrs	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
2	.90	BREZIN, MICHAEL J.	2	29.0	95	9		ABCDEFGHI	10	ABCDEFGHIJ
2	.60	CHAMBERS, WILLIAM N.	2	19.5	90	6	205	BCD FG I	10	ABCDEFGHIJ
2	.70	CHOPPIN, SUZANNE M.	2	43.5	100	7		ABC EFGH	10	ABCDEFGHIJ
2	.90	COHEN, ADRIENNE	2	14.5	100	9	55	ABCDEFGHI	10	ABCDEFGHIJ
2	.80	COLONNA, KARLA	2	22.0	100	8		ABCDEFGH	10	ABCDEFGHIJ
2	.80	GRIFFIN, DIANNE	2	23.0	95	8		ABCDEFGH	10	ABCDEFGHIJ
2	.80	MALTBY, JUDY L.	2	30.0	100	8	91	ABCDEFG I	10	ABCDEFGHIJ
2	.90	MATHEWS, STELLA	2	8.0	100	9	1	ABCDEFGHI	10	ABCDEFGHIJ
2	.70	MURPHY, THERESA	2	20.0	90	7		ABC EFGH	10	ABCDEFGHIJ
2	.90	OLSON, DEBBIE	2	70.3	95	9		ABCDEFGHI	10	ABCDEFGHIJ
2	.90	PHILLIPS, AMY	2	22.0	100	9	64	ABCDEFGHI	10	ABCDEFGHIJ
2	.90	STONE, JUDY	2	35.3	100	9	3	ABCDEFGHI	10	ABCDEFGHIJ
2	.40	STYGAR, THOMAS S.	2	15.5	95	4	225	A C FG	10	ABCDEFGHIJ
2	.90	WILLIAMS, CHERYL L.	2	37.0	100	9	114	ABCDEFGHI	10	ABCDEFGHIJ
3	.86	BAILEY, SUSAN	2	7.0	100	6	13	ABC EFG	7	ABCDEFG
3	.80	BOERKE, THOMAS	2	33.2		8		ABCDEFGH	10	ABCDEFGHIJ
3	.20	BRAND, JOYCE	2	35.5	100	2	22	C G	10	ABCDEFGHIJ
3	.80	BROWDY, LARRY	2	24.0	100	8	23	ABCDEFGH	10	ABCDEFGHIJ
3	.80	BRYAN, SANDY	2	38.5	95	8	21	ABCDEFGH	10	ABCDEFGHIJ
3	.80	DUNK, NANCY	2	22.9	95	8	35	ABCDEFGH	10	ABCDEFGHIJ
3	.80	FERNANDEZ, ROBERT Y.	2	11.4	85	8	32	ABCDEFGH	10	ABCDEFGHIJ
3	.70	MAYNE, JACQUELINE D.	2	21.0	100	7	37	ABCDEF H	10	ABCDEFGHIJ
3	.80	MILLER, BARBARA	2	23.5	95	8	21	ABCDEFGH	10	ABCDEFGHIJ
3	.70	REID, ELIZABETH J.	2	12.9	100	7	38	ABCDEFG	10	ABCDEFGHIJ
3	.60	ROOKS, MARSHA	2	9.5	90	6	14	AB EFGH	10	ABCDEFGHIJ
3	.80	SIBERT, KATHLEEN	2	21.3	100	8	38	ABCDEFGH	10	ABCDEFGHIJ
3	.80	SIGNELL, CORINNE	2	30.5	90	8	20	ABCDEFGH	10	ABCDEFGHIJ
3	.80	STRAUSS, JEANNIE C.	2	16.2	100	8	21	ABCDEFGH	10	ABCDEFGHIJ
3	.60	THIEL, KEN	2	28.0	95	6	20	AB D FGH	10	ABCDEFGHIJ
3	.80	WEINSTOCK, DENISE R.	2	21.0	95	8	23	ABCDEFGH	10	ABCDEFGHIJ
3	.60	WHITE, SHARON L.	2	15.5	90	6	25	A DEFGH	10	ABCDEFGHIJ

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Adamson (.84)
B = Blackman (1.00)
C = Deno (1.00)
D = Haring (.84)
E = Lessinger (.94)
F = Mager (.42)

G = Schwartz (.97)
H = Schwartz (1.00)
I = Schwartz (.00)
J = Seminars (.29)
K = Group Committees (.00)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
2	.64	BREZIN, MICHAEL J.	3	30.0	90	7	69	ABCDEFG	11	ABCDEFGHIJK
2	.55	CHAMBERS, WILLIAM N.	3	28.8	100	6	191	BCDE G J	11	ABCDEFGHIJK
2	.64	CHOPPIN, SUZANNE M.	3	45.0	100	7	37	ABCDEFG	11	ABCDEFGHIJK
2	.73	COHEN, ADRIENNE	3	109.0	100	8	50	ABCDEFG J	11	ABCDEFGHIJK
2	.64	COLONNA, KARLA	3	38.0	100	7	218	ABCDEFG	11	ABCDEFGHIJK
2	.73	GRIFFIN, DIANNE	3	44.0	95	8	-0	ABCDEFG J	11	ABCDEFGHIJK
2	.73	MALTBY, JUDY L.	3	60.0	100	8	79	ABCDEFG J	11	ABCDEFGHIJK
2	.73	MATHEWS, STELLA	3	3.5	100	8	335	ABCDEFG J	11	ABCDEFGHIJK
2	.55	MURPHY, THERESA	3	20.0	90	6		BCDEFG	11	ABCDEFGHIJ
2	.73	OLSON, DEBBIE	3	52.0	80	8		ABCDEFG J	11	ABCDEFGHIJK
2	.73	PHILLIPS, AMY	3	32.5	100	8	97	ABCDEFG J	11	ABCDEFGHIJK
2	.73	STONE, JUDY	3	22.0	100	8	26	ABCDEFG J	11	ABCDEFGHIJK
2	.40	STYGAR, THOMAS S.	3	11.5	95	4	213	ABC E	10	ABCDEFGHIJ
2	.73	WILLIAMS, CHERYL L.	3	34.0	100	8	97	ABCDEFG J	11	ABCDEFGHIJK
3	.55	BAILEY, SUSAN	3	37.3	95	6	24	ABCDE G	11	ABCDEFGHIJK
3	.55	BOERKE, THOMAS	3	25.0		6		ABCDE G	11	ABCDEFGHIJK
3	.36	BRAND, JOYCE	3	65.5	100	4	31	ABC G	11	ABCDEFGHIJK
3	.55	BROWDY, LARRY	3	44.0	100	6	33	ABCDE G	11	ABCDEFGHIJK
3	.45	BRYAN, SANDY	3	53.5	85	5	33	BCDE G	11	ABCDEFGHIJK
3	.55	DUNK, NANCY	3	51.2	100	6	42	ABCDE G	11	ABCDEFGHIJK
3	.55	FERNANDEZ, ROBERT Y.	3	22.4	90	6	24	ABCDE G	11	ABCDEFGHIJK
3	.45	MAYNE, JACQUELINE D.	3	42.0	90	5	33	ABC E G	11	ABCDEFGHIJK
3	.55	MILLER, BARBARA	3	39.5	100	6	40	ABCDE G	11	ABCDEFGHIJK
3	.64	REID, ELIZABETH	3	49.8	100	7	35	ABCDEFG	11	ABCDEFGHIJK
3	.55	ROOKS, MARSHA	3	10.0	100	6	42	ABCDE G	11	ABCDEFGHIJK
3	.36	SIBERT, KATHLEEN	3	30.0	95	4	31	BC FG	11	ABCDEFGHIJK
3	.55	SIGNELL, CORINNE	3	53.5	90	6	39	ABCDE G	11	ABCDEFGHIJK
3	.45	STRAUSS, JEANNIE C.	3	25.1	85	5	22	BCDE G	11	ABCDEFGHIJK
3	.55	THIEL, KEN	3	42.0	80	6	29	ABCDE G	11	ABCDEFGHIJK
3	.55	WEINSTOCK, DENISE R.	3	45.5	100	6	30	ABCDE G	11	ABCDEFGHIJK
3	.45	WHITE, SHARON L.	3	44.5	95	5	47	ABC E G	11	ABCDEFGHIJK

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = CT: Behavioral Objectives for Pupils (.00)
B = Bibliography (.00)
C = Observation Seminar (.27)

Class level	Prop. of resources used	Name	Module Number	Time used in Hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
2		BREZIN, MICHAEL J.	20	2.0	100		28		3	ABC
2	.33	CHAMBERS, WILLIAM N.	20	20.0	100	1	7	C	3	ABC
2		CHOPPIN, SUZANNE M.	20	3.0	100		26		3	ABC
2		COHEN, ADRIENNE	20	17.5	100		91		3	ABC
2		COLONNA, KARLA	20	5.5	100		28		3	ABC
2		GRIFFIN, DIANNE	20	2.0	100		28		3	ABC
2		MALTBY, JUDY L.	20	1.0	100		14		3	ABC
2	.33	MURPHY, THERESA	20	3.5	100	1		C	3	ABC
2		OLSON, DEBBIE	20	0	100				3	ABC
2		PHILLIPS, AMY	20	4.0	100		30		3	ABC
2	.33	WILLIAMS, CHERYL L.	20	5.0	100	1	14	C	3	ABC

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Drucker (.85) E = Video Tape (.38)
B = Kerlinger (.19) F = Multi Media (.04)
C = Peter (.85) G = Observation Seminar (.50)
D = Van Dalen (.54) H = Psychology 317 (.00)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used.	Number of res. avail.	Name of res. available
2	.75	BREZIN, MICHAEL J.	21	47.5	90	6	28	ABCDE G	8	ABCDEFGH
2	.63	CHAMBERS, WILLIAM N.	21	58.0	80	5		A CDE G	8	ABCDEFGH
2	.75	CHOPPIN, SUZANNE M.	21	68.5	90	6	70	ABCDE G	8	ABCDEFGH
2	.63	COHEN, ADRIENNE	21		100	5		ABCD G	8	ABCDEFGH
2	.75	COLONNA, KARLA	21	85.0	80	6	65	ABCDE G	8	ABCDEFGH
2	.50	GRIFFIN, DIANNE	21	122.5	70	4	35	A C E G	8	ABCDEFGH
2	.50	MALTBY, JUDY L.	21	82.0	90	4	28	A C E G	8	ABCDEFGH
2	.38	MATHEWS, STELLA	21	64.0	80	3		A C G	8	ABCDEFGH
2	.50	MURPHY, THERESA	21	88.0	90	4	35	A CD F	8	ABCDEFGH
2	.50	OLSON, DEBBIE	21	92.0	70	4	28	A C E G	8	ABCDEFGH
2	.75	PHILLIPS, AMY	21	72.0	100	6	47	ABCDE G	8	ABCDEFGH
2	.50	STONE, JUDY	21	60.0	90	4	51	A C E G	8	ABCDEFGH
2	.25	STYGAR, THOMAS S.	21	145.0	80	2	28	E G	8	ABCDEFGH
2	.38	WILLIAMS, CHERYL L.	21	68.0	70	3	28	A C G	8	ABCDEFGH
3	.13	BAILEY, SUSAN	21	4.0	100	1		C	8	ABCDEFGH
3	.38	BRAND, JOYCE	21	21.0		3		A CD	8	ABCDEFGH
3	.38	BROWDY, LARRY	21	11.0		3		A CD	8	ABCDEFGH
3	.38	BRYAN, SANDY	21	6.0		3		A CD	8	ABCDEFGH
3	.38	DUNK, NANCY	21	18.0		3		A CD	8	ABCDEFGH
3	.13	FERNANDEZ, ROBERT Y.	21	9.6		1		A	8	ABCDEFGH
3	.38	MILLER, BARBARA	21	16.0		3		A CD	8	ABCDEFGH
3	.25	REID, ELIZABETH J.	21	17.0		2		A C	8	ABCDEFGH
3	.13	ROOKS, MARSHA	21	8.0		1		D	8	ABCDEFGH
3	.13	SIBERT, KATHLEEN	21	6.3		1		C	8	ABCDEFGH
3	.13	SIGNELL, CORINNE	21	11.5		1		A	8	ABCDEFGH
3	.38	WEINSTOCK, DENISE R.	21	24.0		3		A CD	8	ABCDEFGH

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Bannatyne (.56) | C = Smith (.13)
B = Smith (.88) | D = Observation Seminar (.15)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
2	.50	BREZIN, MICHAEL J.	22	22.0	90	2		AB	4	ABCD
2	.50	CHAMBERS, WILLIAM N.	22	5.0	80	2		B D	4	ABCD
2	.50	CHOPPIN, SUZANNE M.	22	32.0	98	2	138	AB	4	ABCD
2	.75	COHEN, ADRIENNE	22	41.0	95	3	1	AB D	4	ABCD
2	.25	COLONNA, KARLA	22	2.5	100	1	0	B	4	ABCD
2	.75	GRIFFIN, DIANNE	22	27.5	95	3	57	A CD	4	ABCD
2	.75	MALTBY, JUDY L.	22	40.3	90	3	57	AB D	4	ABCD
2	.75	MATHEWS, STELLA	22	24.0	90	3	112	ABC	4	ABCD
2	.25	MURPHY, THERESA	22	24.0	90	1		B	4	ABCD
2	.0	OLSON, DEBBIE	22		80				4	ABCD
2	.75	PHILLIPS, AMY	22	7.0	91	3	114	AB D	4	ABCD
2	.75	STONE, JUDY	22	38.0	83	3	113	AB D	4	ABCD
2	.50	STYGAR, THOMAS S.	22	17.0	90	2		B D	4	ABCD
2	.75	WILLIAMS, CHERYL L.	22	25.0	75	3	58	AB D	4	ABCD
3	.25	BROWDY, LARRY	22	1.0		1		B	4	ABCD
3	.25	BRYAN, SANDY	22	3.5		1		B	4	ABCD

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = WISC Kit (Wechsler Intelligence Scale For Children Kit) (1.00)
B = Ferinden (.91)
C = Video Tape (.35)
D = CAI (Computer Assisted Instruction) (.00)
E = Diagnostic Seminar (.45)
F = Field Work (.52)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.50	ADKINS, LEA M.	23	10.0	100	3	23	AB F	6	ABCDEF
1	.17	BROSKA, KENNETH F.	23	2.2	100	1	36	A	6	ABCDEF
1	.33	LIPNER, LAURA J.	23	12.0	100	2	45	AB	6	ABCDEF
1	.50	MAXSON, BONNIE M.	23	18.0	100	3	145	AB F	6	ABCDEF
1	.50	PATRICK, FRANCES J.	23	19.0	100	3	145	AB F	6	ABCDEF
1	.50	THIEBAUD, CYNTHIA J.	23	2.0	80	3	20	AB F	6	ABCDEF
1	.50	TURNER, KAREN	23	16.5	100	3	8	AB F	6	ABCDEF
1	.50	VLOEDMAN, KATHLEEN D. N M	23	18.5	100	3	75	AB F	6	ABCDEF
1	.50	WILLIAMS, GLORIA J.	23	4.8	100	3	4	AB F	6	ABCDEF
2	.67	BREZIN, MICHAEL J.	23	28.0	100	4		ABC E	6	ABCDEF
2	.83	CHAMBERS, WILLIAM N.	23	47.0	90	5	221	ABC EF	6	ABCDEF
2	.67	CHOPPIN, SUZANNE M.	23	68.0	100	4	219	ABC E	6	ABCDEF
2	.67	COHEN, ADRIENNE	23	27.0	80	4	163	ABC E	6	ABCDEF
2	.67	COLONNA, KARLA	23	23.5	100	4	218	AB EF	6	ABCDEF
2	.50	GRIFFIN, DIANNE	23	31.5	100	3	219	ABC	6	ABCDEF
2	.67	MALTBY, JUDY L.	23	57.0	100	4	219	ABC E	6	ABCDEF
2	.67	MATHEWS, STELLA	23	7.5	90	4	193	AB EF	6	ABCDEF
2	.33	MURPHY, THERESA	23	35.0	100	2	53	AB	6	ABCDEF
2	.50	OLSON, DEBBIE	23	28.1	100	3	219	AB E	6	ABCDEF
2	.83	PHILLIPS, AMY	23	25.0	100	5		ABC EF	6	ABCDEF
2	.67	STONE, JUDY	23	10.0	100	4	193	AB EF	6	ABCDEF
2	.17	STYGAR, THOMAS S.	23	10.0	100	1		A	6	ABCDEF
2	.67	WILLIAMS, CHERYL L.	23	58.5	80	4	221	ABC E	6	ABCDEF

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = WISC Kit (Wechsler Intelligence Scale For Children Kit) (1.00)
B = Ferinden (.04)
C = Kirk (.50)
D = Video Tape (.38)
E = CAI (Computer Assisted Instruction) (.04)
F = Diagnostic Seminar (.33)
G = Field Work (.42)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Name of res. available
1	.57	ADAMS, WILMA D.	24	40.5	100	4		AB D G	7	ABCDEFG
1	.43	ADKINS, LEA M.	24	13.0	100	3	44	ABC	7	ABCDEFG
1	.50	BROSKA, KENNETH F.	24	59.5	100	4	109	A C GH	8	ABCDEFGH
1	.43	LIPNER, LAURA J.	24	24.0	100	3	44	ABC	7	ABCDEFG
1	.57	MAXSON, BONNIE M.	24	31.7	100	4	51	ABC G	7	ABCDEFG
1	.57	PATRICK, FRANCES J.	24	18.0	100	4	23	AB D G	7	ABCDEFG
1	.57	THIEBAUD, CYNTHIA J.	24	42.5	90	4	30	AB D G	7	ABCDEFG
1	.43	TURNER, KAREN	24	21.5	100	3	19	AB G	7	ABCDEFG
1	.57	VLOEDMAN, KATHLEEN D. N M	24	43.5	100	4	58	ABC G	7	ABCDEFG
1	.43	WILLIAMS, GLORIA J.	24	7.8	100	3	17	AB G	7	ABCDEFG
2	.43	BREZIN, MICHAEL J.	24	23.0	100	3	186	AB F	7	ABCDEFG
2	.43	CHAMBERS, WILLIAM N.	24	5.0	90	3		AB F	7	ABCDEFG
2	.57	CHOPPIN, SUZANNE M.	24	54.0	100	4	222	ABC F	7	ABCDEFG
2	.43	COHEN, ADRIENNE	24	29.0	100	3	205	ABC	7	ABCDEFG
2	.57	COLONNA, KARLA	24	62.5	90	4	205	ABC G	7	ABCDEFG
2	.29	GRIFFIN, DIANNE	24	24.0	100	2		AB	7	ABCDEFG
2	.29	MALTBY, JUDY L.	24	34.0	100	2	186	AB	7	ABCDEFG
2	1.00	MATHEWS, STELLA	24	26.0	80	6		ABCDEF	6	ABCDEF
2	.57	MURPHY, THERESA	24	14.5	100	4		AB D F	7	ABCDEFG
2	.29	OLSON, DEBBIE	24	20.0	80	2	186	AB	7	ABCDEFG
2	.86	PHILLIPS, AMY	24	4.6	90	6	213	ABCD FG	7	ABCDEFG
2	.57	STONE, JUDY	24	14.2	100	4	150	AB D F	7	ABCDEFG
2	.57	STYGAR, THOMAS S.	24	26.0	100	4	219	ABCD	7	ABCDEFG
2	.71	WILLIAMS, CHERYL L.	24	36.0	85	5	251	ABCD F	7	ABCDEFG

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Frostig (.96)
B = Frostig (.00)
C = Video Tape (.22)
D = CAI (Computer Assisted Instruction) (.00)
E = Diagnostic Seminar (.00)
F = Field Work (.43)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.33	ADKINS, LEA M.	25	7.0	100	2	36	A F	6	ABCDEF
1	.50	BROSKA, KENNETH F.	25	5.4	100	3	36	A C F	6	ABCDEF
1	.50	HODGES (TURNER), KAREN M	25	11.0	100	3	112	A C F	6	ABCDEF
1	.50	LIPNER, LAURA J.	25	11.0	100	3	112	A C F	6	ABCDEF
1	.33	MAXSON, BONNIE M.	25	14.5	100	2	38	A F	6	ABCDEF
1	.50	PATRICK, FRANCES J.	25	11.0	95	3	12	A C F	6	ABCDEF
1	.33	THIEBAUD, CYNTHIA J.	25	13.0	100	2	-15	A F	6	ABCDEF
1	.33	TURNER, KAREN	25	6.5	100	2	13	A F	6	ABCDEF
1	.33	VLOEDMAN, KATHLEEN D.N M	25	26.5	100	2	58	A F	6	ABCDEF
1	.33	WILLIAMS, GLORIA J.	25	8.0	100	2	16	A C	6	ABCDEF
2	.17	BREZIN, MICHAEL J.	25	9.0	100	1	37	A	6	ABCDEF
2	.17	CHAMBERS, WILLIAM N.	25	13.0	90	1	-0	A	6	ABCDEF
2	.17	CHOPPIN, SUZANNE M.	25	12.0	100	1	222	A	6	ABCDEF
2	.17	COHEN, ADRIENNE	25	10.0	100	1	184	A	6	ABCDEF
2	.33	COLONNA, KARLA	25	24.0	100	2	359	A F	6	ABCDEF
2	.17	GRIFFIN, DIANNE	25	13.5	100	1	40	A	6	ABCDEF
2	.17	MALTBY, JUDY L.	25	14.0	100	1	34	A	6	ABCDEF
2	.17	MATHEWS, STELLA	25	4.0	100	1	35	A	6	ABCDEF
2	.17	MURPHY, THERESA	25	10.5	100	1	40	A	6	ABCDEF
2	.17	OLSON, DEBBIE	25	11.0	100	1	57	A	6	ABCDEF
2	.33	PHILLIPS, AMY	25	25.0	100	2	39	A F	6	ABCDEF
2		STONE, JUDY	25		90				6	ABCDEF
2	.17	STYGAR, THOMAS S.	25	10.0	100	1	15	A	6	ABCDEF
2	.17	WILLIAMS, CHERYL L.	25	17.0	100	1	185	A	6	ABCDEF

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = SIT (Slosson Intelligence Test) (.70)
B = SORT (Slosson Oral Reading Test) (.75)
C = Video Tape (.10)
D = CAI (Computer Assisted Instruction) (.00)
E = Diagnostic Seminar (.00)
F = Field Work (.40)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used		Number of res. avail.	Names of res. available
1	.50	ADKINS, LEA M.	26	3.2	100	3	40	AB	F	6	ABCDEF
1	.67	BROSKA, KENNETH F.	26	10.1	100	4	140	ABC	F	6	ABCDEF
1	.33	HODGES (TURNER), KAREN M	26	12.0	100	2	7	AB		6	ABCDEF
1	.33	LIPNER, LAURA J.	26	12.0	100	2	7	AB		6	ABCDEF
1	.33	MAXSON, BONNIE M.	26	2.1	100	2	141	AB		6	ABCDEF
1	.43	PATRICK, FRANCES J.	26	7.0	100	3	38	B	FG	7	ABCDEFG
1	.50	THIEBAUD, CYNTHIA J.	26	15.0	100	3	30	AB	F	6	ABCDEF
1	.33	TURNER, KAREN	26	13.0	100	2	50	AB		6	ABCDEF
1	.43	VLOEDMAN, KATHLEEN D.N M	26	10.0	100	3	45	C	FG	7	ABCDEFG
1	.50	WILLIAMS, GLORIA J.	26	8.3	100	3	23	AB	F	6	ABCDEF
2	.33	CHOPPIN, SUZANNE M.	26	7.5	100	2	190	AB		6	ABCDEF
2		COHEN, ADRIENNE	26	9.0	100		1			6	ABCDEF
2	.50	COLONNA, KARLA	26	8.5	100	3	29	AB	F	6	ABCDEF
2	.50	GRIFFIN, DIANNE	26	11.0	100	3	76	AB	F	6	ABCDEF
2	.33	MALTBY, JUDY L.	26	6.0	100	2	44	AB		6	ABCDEF
2	0	MATHEWS, STELLA	26	-0	100					6	ABCDEF
2	0	MURPHY, THERESA	26	10.0	100		6			6	ABCDEF
2	.33	OLSON, DEBBIE	26	8.0	100	2	34	AB		6	ABCDEF
2		PHILLIPS, AMY	26	8.5	100		15			6	ABCDEF
2	.33	STONE, JUDY	26	5.0	100	2	140	AB		6	ABCDEF
2	.33	WILLIAMS, CHERYL L.	26	4.0	100	2	201	AB		6	ABCDEF

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Jastak (.98)
B = Video Tape (.00)
C = Field Work (.48)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.33	ADAMS, WILMA D.	27	6.0	100	1	21	A	3	ABC
1	67	ADKINS, LEA M.	27	3.8	100	2	97	A C	3	ABC
1	.75	BROSKA, KENNETH F.	27	8.8	100	3	140	A CD	4	ABCD
1	.33	HODGES (TURNER), KAREN M	27	2.0	100	1	100	A	3	ABC
1	.33	LIPNER, LAURA J.	27	2.0	100	1	100	A	3	ABC
1	.0	MAXSON, BONNIE M.	27		100		100		3	ABC
1	.67	PATRICK, FRANCES J.	27	6.0	95	2	14	A C	3	ABC
1	.67	THIEBAUD, CYNTHIA J.	27	9.5	100	2	31	A C	3	ABC
1	.50	TURNER, KAREN	27	8.2	95	2	15	CD	4	ABCD
1	.33	VLOEDMAN, KATHLEEN D. N M	27	6.0	100	1	35	A	3	ABC
1	.67	WILLIAMS, GLORIA J.	27	3.0	90	2	10	A C	3	ABC
2	.33	CHOPPIN, SUZANNE M.	27	7.5	100	1	190	A	3	ABC
2	.33	COHEN, ADRIENNE	27	7.0	100	1	1	A	3	ABC
2	.67	GRIFFIN, DIANNE	27	1.0	100	2	76	A C	3	ABC
2	.33	MALTBY, JUDY L.	27	6.0	100	1	44	A	3	ABC
2	.33	MURPHY, THERESA	27	3.0	100	1	93	A	3	ABC
2	.33	OLSON, DEBBIE	27	8.0	100	1	7	A	3	ABC
2	.33	MATHEWS, STELLA	27		90	1	-0	A	3	ABC

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Gates (1.00)
B = Video Tape (.07)
C = Diagnostic Seminar (.00)
D = Field Work (.53)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.25	ADAMS, WILMA D.	28	10.0	100	1	20	A	4	ABCD
1	.50	ADKINS, LEA M.	28	5.0	100	2	114	A D	4	ABCD
1	.50	BROSKA, KENNETH F.	28	20.0	100	2	140	A D	4	ABCD
1	.25	HODGES (TURNER), KAREN M	28	10.5	100	1	109	A	4	ABCD
1	.25	LIPNER, LAURA J.	28	10.5	100	1	109	A	4	ABCD
1	.25	MAXSON, BONNIE M.	28	5.3	100	1	109	A	4	ABCD
1	.50	PATRICK, FRANCES J.	28	.7	90	2	7	A D	4	ABCD
1	.50	THIEBAUD, CYNTHIA J.	28		100	2	6	A D	4	ABCD
1	.75	TURNER, KAREN	28	9.0	100	3	9	AB D	4	ABCD
1	.25	VLOEDMAN, KATHLEEN D. N M	28	15.0	100	1	62	A	4	ABCD
1	.50	WILLIAMS, GLORIA J.	28	4.0	90	2	13	A D	4	ABCD
2	.50	GRIFFIN, DIANNE	28	11.0	100	2	76	A D	4	ABCD
2	.25	MALTBY, JUDY L.	28	5.0	100	1	44	A	4	ABCD
2	.25	OLSON, DEBBIE	28	4.0	100	1	8	A	4	ABCD
2	.50	PHILLIPS, AMY	28	8.0	100	2	11	A D	4	ABCD
2	.25	WILLIAMS, CHERYL L.	28	8.5	100	1	10	A	4	ABCD

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Hildreth (.73)
B = Durost (.53)
C = Video Tape (.00)
D = CAI (Computer Assisted Instruction) (.00)
E = Diagnostic Seminar (.00)
F = Field Work (.53)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.33	ADAMS, WILMA D.	29	5.0	100	2	20	A F	6	ABCDEF
1	.17	BROSKA, KENNETH F.	29	15.0	100	1	140	F	6	ABCDEF
1	.17	HODGES (TURNER), KAREN M	29	3.5	100	1	101	A	6	ABCDEF
1	.17	LIPNER, LAURA J.	29	3.5	100	1	101	A	6	ABCDEF
1	.0	MAXSON, BONNIE M.	29	.0	90		71		6	ABCDEF
1	.50	PATRICK, FRANCES J.	29	3.0	100	3	2	AB F	6	ABCDEF
1	.0	THIEBAUD, CYNTHIA J.	29		100		5		6	ABCDEF
1	.50	TURNER, KAREN	29		100	3	2	AB F	6	ABCDEF
1	.0	VLOEDMAN, KATHLEEN D. N M	29	6.0	100		2		6	ABCDEF
1	.50	WILLIAMS, GLORIA J.	29	5.5	100	3	105	AB F	6	ABCDEF
2	.33	CHOPPIN, SUZANNE M.	29	6.5	100	2	61	AB	6	ABCDEF
2	.25	COHEN, ADRIENNE	29	7.0	100	1	1	A	4	ABCD
2	.50	COLONNA, KARLA	29	5.0	100	3	8	AB F	6	ABCDEF
2	.17	GRIFFIN, DIANNE	29	5.0	100	1	76	F	6	ABCDEF
2	.33	MALTBY, JUDY, L.	29	2.0	100	2		AB	6	ABCDEF
2	.0	OLSON, DEBBIE	29	8.0	100		26		6	ABCDEF
2	.50	PHILLIPS, AMY	29	12.0	100	3	8	AB F	6	ABCDEF
2	.33	WILLIAMS, CHERYL L.	29	28.0	100	2	3	AB	6	ABCDEF

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = EDR 401 (.75)
B = Diagnostic Seminar (.56)
C = Field Work (.69)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.67	ADAMS, WILMA D.	30	44.0	100	2	47	A C	3	ABC
1	.33	ADKINS, LEA M.	30	60.0	100	1	148	A	3	ABC
1	.33	BROSKA, KENNETH F.	30	40.0	100	1	38	C	3	ABC
1	.33	HODGES (TURNER), KAREN M	30	80.5	100	1	147	A	3	ABC
1	.33	LIPNER, LAURA J.	30	80.5	100	1	147	A	3	ABC
1	.33	MAXSON, BONNIE M.	30	5.2	100	1	131	A	3	ABC
1	.75	PATRICK, FRANCES J.	30	55.5	100	3	105	A CD	4	ABCD
1	.67	THIEBAUD, CYNTHIA J.	30	13.0	100	2		BC	3	ABC
1	.67	TURNER, KAREN	30	6.5	100	2		BC	3	ABC
1	1.00	WILLIAMS, GLORIA J.	30	41.5	100	3	119	ABC	3	ABC
2	0	BREZIN, MICHAEL J.	30	1.0	90	0			3	ABC
2	1.00	GRIFFIN, DIANNE	30	160.0	100	3	3	ABC	3	ABC
2	1.00	MALTBY, JUDY L.	30	80.0	100	3	3	ABC	3	ABC
2	.67	MURPHY, THERESA	30	6.0		2	-0	AB	3	ABC
2	1.00	OLSON, DEBBIE	30	160.0	100	3	3	ABC	3	ABC
2	1.00	PHILLIPS, AMY	30	90.0	100	3	105	ABC	3	ABC
2	.67	WILLIAMS, CHERYL L.	30	160.0	100	2	50	BC	3	ABC

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Blackman (.09) D = Reynolds (.64)
B = Edling (.09) E = Schwartz (.09)
C = Hunt (.18) F = Diagnostic Seminar (.27)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.17	ADAMS, WILMA D.	31	20.0	100	1	48	F	6	ABCDEF
1	.17	ADKINS, LEA M.	31	30.0	100	1	28	F	6	ABCDEF
1	.0	BROSKA, KENNETH F.	31	28.0	100		33		6	ABCDEF
1	.17	HODGES (TURNER), KAREN M	31	1.0	100	1		D	6	ABCDEF
1	.17	LIPNER, LAURA J.	31	1.0	100	1		D	6	ABCDEF
1	.33	MAXSON, BONNIE M.	31	1.8	100	2	-0	CD	6	ABCDEF
1	.33	PATRICK, FRANCES J.	31	15.0	100	2	52	D F	6	ABCDEF
1	.0	TURNER, KAREN	31	6.0	100				6	ABCDEF
1	.0	WILLIAMS, GLORIA J.	31	4.0	100				6	ABCDEF
2	.67	CHOPPIN, SUZANNE M.	31	26.5	100	4		ABCD	6	ABCDEF
2	.33	PHILLIPS, AMY	31	40.0	100	2	101	DE	6	ABCDEF
2	.33	WILLIAMS, CHERYL L.	31	16.0	100	2		A D	6	ABCDEF

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = MCTP (Model Clinical Teacher Profile) (.06)
B = Diagnostic Seminar (.63)
C = Field Work (.75)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.67	ADAMS, WILMA D.	32	22.0	100	2	48	BC	3	ABC
1	.33	ADKINS, LEA M.	32	98.0	100	1	46	C	3	ABC
1	.67	BROSKA, KENNETH F.	32	27.0	100	2	27	BC	3	ABC
1		HODGES (TURNER), KAREN M	32	9.0	100		1		3	ABC
1		LIPNER, LAURA J.	32	9.0	100		1		3	ABC
1	.33	MAXSON, BONNIE M.	32	59.0	100	1		C	3	ABC
1	.75	PATRICK, FRANCES J.	32	27.0	100	3	99	BCD	4	ABCD
1	.67	THIEBAUD, CYNTHIA J.	32	40.0	100	2	-0	BC	3	ABC
1	.33	TURNER, KAREN	32	30.6	100	1	77	C	3	ABC
1	1.00	WILLIAMS, GLORIA J.	32	17.5	100	3	91	ABC	3	ABC
2	.67	CHAMBERS, WILLIAM N.	32	60.0	90	2	74	BC	3	ABC
2		GRIFFIN, DIANNE	32		100				3	ABC
2	.67	MALTBY, JUDY L.	32	30.0	100	2		BC	3	ABC
2	.33	MURPHY, THERESA	32	11.0	90	1	66	B	3	ABC
2	.67	OLSON, DEBBIE	32	30.0	100	2	3	BC	3	ABC
2	.67	PHILLIPS, AMY	32	80.0	100	2	-0	BC	3	ABC
2		WILLIAMS, CHERYL L.	32	30.0	100	-0	-0		3	ABC

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Auckerman (.73)
B = Duncan (.20)
C = Nichols (.13)
D = MFTES (Mathematics for the Elementary School) (.00)
E = Intervention Seminar (.27)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.60	ADAMS, WILMA D.	40	43.0	100	3	32	AB E	5	ABCDE
1	.20	ADKINS, LEA M.	40	40.0	90	1	27	A	5	ABCDE
1	.20	BROSKA, KENNETH F.	40	50.0	100	1	25	A	5	ABCDE
1	.20	HODGES (TURNER), KAREN M	40	40.0	100	1	1	A	5	ABCDE
1	.20	LIPNER, LAURA J.	40	40.0	100	1	1	A	5	ABCDE
1		MAXSON, BONNIE M.	40	-0	100				5	ABCDE
1	.60	PATRICK, FRANCES J.	40	20.0	95	3	64	AB E	5	ABCDE
1	0	THIEBAUD, CYNTHIA J.	40	8.0	100				5	ABCDE
1	.20	TURNER, KAREN	40	36.5	95	1	-0	A	5	ABCDE
1		VLOEDMAN, KATHLEEN D. N M	40	16.0	100	0	19		5	ABCDE
1	.20	WILLIAMS, GLORIA J.	40	15.4	90	1		A	5	ABCDE
2	.80	CHOPPIN, SUZANNE M.	40	37.0	100	4		ABC E	5	ABCDE
2		GRIFFIN, DIANNE	40		100				5	ABCDE
2	.40	MURPHY, THERESA	40	2.5	100	2		A E	5	ABCDE
2	.20	PHILLIPS, AMY	40	10.0	100	1		A	5	ABCDE
2	.60	WILLIAMS, CHERYL L.	40	13.0	100	3		ABC	5	ABCDE

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Allen (.39)
B = Buckley (.61)
C = Becker (.35)
D = Bugelski (.87)
E = Cruickshank (.22)
F = Hewett (.61)
G = Homme (.43)
H = Kotick (.32)
I = Oleary (.39)
J = Whelan (.22)
K = Intervention Seminar (.17)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.27	ADAMS, WILMA D.	41	13.0	100	3	22	D F H	11	ABCDEFGHIJKL
1	.30	ADKINS, LEA M.	41	120.0	90	3	27	A D F	10	ABCDEFGHIJKL
1	.27	BROSKA, KENNETH F.	41	100.0	100	3	44	D F K	11	ABCDEFGHIJK
1	.18	HODGES (TURNER), KAREN M	41	5.5	95	2	-0	D F	11	ABCDEFGHIJK
1	.18	LIPNER, LAURA J.	41	5.5	100	2	-0	D F	11	ABCDEFGHIJK
1	.18	MAXSON, BONNIE M.	41	1.3	100	2	-0	B D	11	ABCDEFGHIJK
1	.9	PATRICK, FRANCES J.	41	24.0	90	1	42	K	11	ABCDEFGHIJK
1		TURNER, KAREN	41	15.3	95				11	ABCDEFGHIJK
1	.18	WILLIAMS, GLORIA J.	41	1.5	90	2		JK	11	ABCDEFGHIJK
2	.73	CHOPPIN, SUZANNE M.	41	77.5	100	8		BCDEFG IJ	11	ABCDEFGHIJK
2	.9	GRIFFIN, DIANNE	41	4.0	70	1		B	11	ABCDEFGHIJK
2	.36	MURPHY, THERESA	41	10.5	95	4		B D H K	11	ABCDEFGHIJK
2	.45	PHILLIPS, AMY	41	24.5	80	5		BCD G I	11	ABCDEFGHIJKL
2	.55	STYGAR, THOMAS S.	41	50.0	100	6	97	ABCDEF	11	ABCDEFGHIJK
2	.36	WILLIAMS, CHERYL L.	41	10.0	100	4		AB D F	11	ABCDEFGHIJK
3	.82	BRAND, JOYCE	41	29.0	100	9	44	ABCDEFG IJ	11	ABCDEFGHIJK
3	.91	DUNK, NANCY	41	24.5	90	10	-0	ABCDEFGHIJ	11	ABCDEFGHIJK
3	.45	FERNANDEZ, ROBERT Y.	41	11.4	60	5	50	BCD G I	11	ABCDEFGHIJK
3	.55	MILLER, BARBARA	41	31.5	100	6	48	B D FGHI	11	ABCDEFGHIJK
3	.64	REID, ELIZABETH J.	41	47.8	100	7		AB D FGHI	11	ABCDEFGHIJK
3	.73	SIGNELL, CORINNE	41	32.0	90	8		ABCD GHIJ	11	ABCDEFGHIJK
3	.55	STRAUSS, JEANNIE C.	41	15.6	85	6		A DEFG I	11	ABCDEFGHIJK
3	.36	THIEL, KEN	41	28.7	60	4	52	BCD G	11	ABCDEFGHIJK
3	.27	WEINSTOCK, DENISE R.	41	27.5	100	3		A D F	11	ABCDEFGHIJK

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Intervention Seminar (.71)
B = Clinical Teacher Sample Performance Contract (.36)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.50	ADAMS, WILMA D.	42	17.0	100	1	25	A	2	AB
1	.50	ADKINS, LEA M.	42	40.0	90	1	30	A	2	AB
1	.50	BROSKA, KENNETH F.	42	50.0	100	1	32	A	2	AB
1	.50	LIPNER, LAURA J.	42	15.0	100	1	1	A	2	AB
1		MAXSON, BONNIE M.	42		100		39		2	AB
1	.50	PATRICK, FRANCES J.	42	12.0	100	1	49	A	2	AB
1		TURNER, KAREN	42	12.7	100				2	AB
1	.50	VLOEDMAN, KATHLEEN D. N M	42	6.0	100	1	19	B	2	AB
1		WILLIAMS, GLORIA J.D. N M	42	2.5	90				2	AB
2	1.00	CHOPPIN, SUZANNE M.	42	52.5	100	2	28	AB	2	AB
2	.50	PHILLIPS, AMY	42	16.0		1		A	2	AB
2	1.00	STYGAR, THOMAS S.	42	12.0	100	2	68	AB	2	AB
2	1.00	WILLIAMS, CHERYL L.	42	44.0	100	2	18	AB	2	AB
3	1.00	BAILEY, SUSAN	42	44.0	100	2	18	AB	2	AB

TABLE 7 — CONTINUED

Names of resources codified below. The numbers in parentheses refer to the proportion of students utilizing each resource.

A = Intervention Seminar (.67)
B = Field Work (.92)

Class level	Prop. of resources used	Name	Module Number	Time used in hours	Prof. attained	Number of res. used	Number of days	Name of res. used	Number of res. avail.	Names of res. available
1	.50	ADAMS, WILMA D.	43	40.0	100	1		B	2	AB
1	.50	ADKINS, LEA M.	43	160.0	90	1	27	B	2	AB
1	1.00	HODGES (TURNER), KAREN M.	43	.0	95	2		AB	2	AB
1	1.00	LIPNER, LAURA J.	43	.0	100	2		AB	2	AB
1	.0	MAXSON, BONNIE M.	43	30.0	100				2	AB
1	1.00	PATRICK, FRANCES J.	43	45.0	100	2	48	AB	2	AB
1	.0	TURNER, KAREN	43	16.0	95				2	AB
1	.50	VLOEDMAN, KATHLEEN D. N M	43	74.0	100	1		B	2	AB
1	1.00	WILLIAMS, GLORIA J.D. N M	43	44.0	90	2	67	AB	2	AB
2	1.00	CHOPPIN, SUZANNE M.	43	20.0		2		AB	2	AB
2	1.00	PHILLIPS, AMY	43	24.0		2		AB	2	AB
2	1.00	STYGAR, THOMAS S.	43	75.0	100	2	66	AB	2	AB
2	1.00	WILLIAMS, CHERYL L.	43	215.0		2		AB	2	AB

PROTOTYPE CURRICULUM PERFORMANCE DATA

The prototype Clinical Teacher Model curriculum was developed during 1970-72. The initial formative evaluation design and activities during this implementation phase of the Project focused upon trainee and curriculum performance and attitudes in order to identify instructional content and processes which needed revision. A major revision effort, based upon these data, was conducted during 1973.

The Clinical Teacher Model specified four levels of training objectives for performance-based teacher education programs: early awareness, knowledge, performance, and product. Each level provides different experiences for the trainees and requires different procedures for assessment. The three higher levels of objectives, referring to trainee experiences, encompass the six criteria for assessing the effectiveness of trainees and of teacher preparation programs advocated by Turner (1972). This section is organized by level of objective of the Clinical Teacher Model with the data presented and discussed according to Turner's effectiveness criteria.

KNOWLEDGE OBJECTIVES

Knowledge objectives generally represent the lowest level of measurable outcome in a performance-based training program. According to Turner, the criterion for a knowledge outcome is the demonstration of understanding of some behavior, concept, or principle related to teaching. In the Clinical Teacher Program, demonstration of competency at the knowledge level generally involves a written product, such as the completion of a term paper, development of a set of instructional materials to be used by future students, or responding to a written essay test item.

The student performance is assessed by the Clinical Professor and the data stored in the computerized data management system. Junior and senior trainee performance for all knowledge objectives during the 1972-73 school year is summarized in Table 8.

TABLE 8
Summary of Clinical Teacher Trainee
Proficiency of Knowledge Objectives by 6/1/73

Module Number	Number of Students Completing Module	Average time to Completion (Hours)	Average Proficiency (Percent)
001	8	25.3	95
002	8	38.7	96
003	9	44.1	96
021	12	81.7	85
022	10	28.2	88
030	7	46.7	100
031	4	23.2	100
032	7	33.0	100
040	6	34.8	97
041	4	64.2	95

The data indicates that proficiency levels for trainees completing the knowledge modules were generally quite high. These high performance levels imply instructional adequacy with no need to revise the modules in order to improve achievement. It should be noted, however, that none of the modules was completed by all students. In a program that is performance-based rather than time-based, several factors may contribute to the incomplete status of the modules. First, students are not required to proceed through the curriculum in any fixed sequence; thus different students will have completed different modules at any given point in time. Second, individual differences in students will create considerable variation in student placement in the curriculum by the end of two years in the program. Finally, during the first year in the program, it is probable that the new-found freedom accompanying a performance-based program may create adjustment problems for certain students with traditional learning patterns.

The Clinical Teacher Program identified the latter factor of student freedom as a potential problem for a small, but significant, portion of the trainees. Recognizing the difficulty that may be experienced by learners who have developed a dependence upon external influence for motivation, the student orientation program was modified to provide greater structure. "Welcome to the System," Vol. 1, Chapter 3, more clearly specifies processes for achieving stated objectives and indicates that a reasonable time limit for the completion of each module is subject to negotiation with the Clinical Professor.

PERFORMANCE OBJECTIVES

Whereas knowledge objectives may require trainees to verbalize their understanding of the concepts or procedures involved in employing one or a combination of teaching skills, performance objectives require overt demonstration of such behaviors. Turner (1972) identified three different levels of criteria for demonstrating the attainment of teaching skills. The three criterion levels range from the display of a limited number of isolated teaching skills at Level 5, to the demonstration of the total complex teaching behavior under actual classroom conditions at Level 3.

Criterion Level 5 places practically no restrictions upon the teaching situation and may, in fact, be totally simulated. The Clinical Teacher Trainee demonstrates Level 5 performance during the simulated training exercises provided for acquiring the skills needed to administer certain standardized psychological tests. In the Clinical Teacher Program, the evaluation of junior trainee performance at this level is provided by feedback from selected master's trainees (serving as cross-peer tutors) and faculty assessment.

A majority of the pre-internship assessment of trainee attainment of performance objectives occurs in the field settings and would represent Turner's Criterion Level 4. Each senior trainee spends a minimum of two academic quarters in public school resource rooms acquiring and demonstrating the Clinical Teacher competencies of diagnosis and intervention. The performance data for the seniors of 1972-73 are presented in Table 9. The high levels of trainee proficiency in demonstrating diagnostic and intervention competencies provide additional evidence of the efficacy of these program elements.

TABLE 9
Summary of Clinical Teacher Trainee Proficiency of Performance Objectives by 6/1/73

Module Number	Number of Students Completing Module	Average time to Completion (Hours)	Average Proficiency (Percent)
023	10	11.5	98
024	9	29.1	98
025	9	11.4	98
026	10	9.9	100
027	10	5.3	98
028	10	8.6	98
029	9	4.2	98
042	7	20.0	98
043	3	83.0	93

Criterion Level 3 represents the highest level of judgment about teaching competence that is based on the observable, overt behavior of the teacher. Observation data at this criterion level provides evidence of teacher competencies. In the Clinical Teacher Program, these competencies are demonstrated under actual classroom conditions provided by the internship phase of the program. During the internship experience, the Clinical Teacher Trainees must prepare and implement performance contracts with at least four different pupils. Proficient demonstration of the Clinical Teacher competencies under classroom conditions is the major outcome of the internship experience.

Two criteria are used to judge teaching competence during internship. In addition to demonstrating teaching skills at criterion Level 3, the intern is expected to produce pupil achievement of specified behavior objectives.

PRODUCT OBJECTIVES

The highest level of objective for performance-based teacher education programs is the product objective. Product objectives refer specifically to the products of the teacher performance, that is, to pupil achievement which occurs as a direct result of the teacher behavior. Turner's Criterion Levels 1 and 2 both refer to product objectives based upon pupil outcomes, but differ in the length of time that constitutes the performance period. Assessment of

Criterion Level 1 requires data over a relatively long period of time, perhaps as much as one to two years. Criterion Level 2 refers to a much shorter time period and is less reliable because of errors introduced by temporary fluctuations in teacher or pupil behavior.

As previously indicated, the first specification of product objectives in the Clinical Teacher Program is in conjunction with the intervention competency included in the senior field experiences. A considerably more extensive demonstration of the pupil performance product is required during the internship. Table 10 presents the results of the internship experiences for the 1973 graduates of the Clinical Teacher Program. It should be noted that each of the interns performed at a level judged acceptable by the Clinical Professor and cooperating teachers and fulfilled the terms of the teacher — student contracts by facilitating pupil performance of the specified outcomes.

TABLE 10
Summary of Clinical Teacher Trainee
Proficiency of Product Objectives During Internship, 1972-73
Academic Year

Trainee ID No.	No. of Pupils	No. of Contracts		Type of Behavior					Trainee Performance
		Written	Fulfilled	Pre-Reading	Reading	Language	Math	Social	
1	4	9	9	4	3		1	1	M
2*	9	20	20	6	3	5		6	M
3	4	4	4		2		1	1	M
4*	9	20	20	6	3	5		6	M
5	4	4	4	1	2		1		M
6	4	5	5	1	1	1	1	1	M
7	4	6	6	1	3	1		1	M
8	4	6	6	1	2	1	1	1	M

*Worked together as a team.

Due to the relatively short period of time provided for internship, (one full academic quarter) attainment of the product objectives does not go beyond Criterion Level 2. Although these data provide some evidence of the validity of the Clinical Teacher competencies, it is desirable to collect more convincing validity data under actual teaching conditions and over an extended period of time. This type of study, providing documentation of the effectiveness of the Clinical Teacher competencies in producing pupil gains, is the summative evaluation of the Clinical Teacher Model and is reported in Chapter 5.

ATTITUDINAL DATA

An essential element in the development of an innovative project is the revision or re-modeling necessitated by unanticipated outcomes arising during initial implementation of the project. Such outcomes may be in the form of either benefits or problems. Systematic identification and evaluation of both unexpected benefits and problems provides the foundation for effective revision of the program. The two approaches utilized for obtaining this information were: (1) a survey of student attitudes towards the benefits and problems associated with an individualized performance-based teacher education curriculum, and (2) a survey of student attitudes regarding the field experiences that provide the major settings for demonstrating competencies.

PROBLEMS AND BENEFITS

The procedures employed to identify and evaluate unanticipated outcomes of the Clinical Teacher Model Project were the administration of four survey instruments. The first two were free-response questionnaires; one requested statements of problems related to the program, the other requested statements of advantages or benefits. Content analysis and systematic sorting of the free responses reported in these two instruments led to the development of two follow-up questionnaires (one for problem analysis and one for benefit analysis), consisting of set items with a four-point opinion scale. These follow-up instruments were administered to the first- and second-year trainees in the program. The data analysis included collapsing the four-point scale of each instrument into two categories, minor problems or benefits and major problems or benefits (See Appendix D).

Tables 11 and 12 list by category and student level the total number of problems and benefits identified by two-thirds or more of the trainees. Although no control was used for similarity or redundancy of items within categories, the gross number of benefits derived from the program far outweighed the problems identified with the Clinical Teacher Project.

TABLE 11
Major Problems indicated by two-thirds or more of first- and second-year trainees by categories

PROBLEM CATEGORY	Number of Potential Problems Identified	Number of Major Problems Identified by First-year Trainees N = 15	Number of Major Problems Identified by Second-year Trainees N = 9
I. Problems Related to the instructional process	8	0	0
II. Problems Related to content of instruction	8	0	5
III. Problems Related to goals and objectives	10	5	1
IV. Problems related to instructional resources	8	6	4
V. Problems related to seminars	10	3	2
VI. Problems related to performance assessment	7	2	0
VII. Problems related to student-faculty relationships	8	1	1
TOTAL	59	17	13

The problem survey results indicated that the first-year trainees were concerned primarily with problems associated with the implementation of instruction, while the second-year trainees found problems in the content of instruction. This difference appeared to be directly related to the types of activities in which the two groups of students were involved.

Because first-year students were focusing upon cognitive objectives, factors related to areas such as clarity of goals and objectives and availability and quality of resources were more likely to present problems. Second-year students involved in diagnostic and intervention activities tended to encounter problems related to the instructional content and availability of resources for the processes of diagnosis and intervention.

The majority of the major problems of the Clinical Teacher Project appeared to be highly specific in nature and unique to circumstances existing at the time of the survey. As a result of the preliminary data analysis, the project continued to revise the presentation of goals and objectives, appraising the instructional resources utilized in the program, and evaluating the content of instruction in the program, especially at the second-year level.

Responses of the Clinical Teacher Trainees on the benefit analysis survey were overwhelmingly positive. Even allowing for redundancy in the items and possible bias of students in favor of a program they chose, and in which they continue to participate, the response pattern clearly indicates that the students perceive many major benefits derived from the program.

Table 12 lists, by category, the number of benefits and advantages identified as major by two-thirds or more of the students. In general, the trainees seemed convinced that an individualized program focusing attention on the learning objectives of the individual child has greater potential for meeting the needs of exceptional children than less personal approaches and those that emphasize categorical labeling. The feeling that various diagnostic and intervention competencies are crucial for assisting pupils to overcome academic and social inadequacies was expressed in numerous ways.

TABLE 12
Major Benefits indicated by two-thirds or more of first- and second-year trainees by categories

BENEFIT CATEGORY	Number of Potential Benefits Identified	Number of Major Benefits Identified by	
		First-year Trainees N = 14	Second-year Trainees N = 10
I. Advantages for trainees related to personal aspirations	7	5	5
II. Advantages for trainees related to a current role as a student	15	9	6
III. Advantages for trainees related to expected role as a Clinical Teacher	10	8	3
IV. Advantages for future pupils related to the trainee's competencies	6	5	2
V. Advantages for future pupils related to the teaching method	9	8	8
VI. Advantages for future pupils related to the teaching philosophy	10	10	9
TOTAL	57	45	33

Beginning trainees emphasized advantages related to such factors as acquisition of knowledge of effective teaching processes for children with special learning difficulties, and flexibility of the Clinical Teacher, with freedom to choose appropriate teaching methods and use a variety of available media. Second-year trainees placed greater emphasis on benefits related to teaching philosophy, greater pupil contact, and proper pupil placement on a skill continuum. Overall, the perceived benefits of the Clinical Teacher Prototype by participants in the program outweighed the problems.

The Clinical Teacher Model extensively utilizes field experiences for many early awareness and knowledge objectives and all performance and product objectives. These field experiences are integrated into the instructional sequence at appropriate times throughout the three years of training. This summary presents the advantages and problems encountered in the pre-internship field experiences during the first two years of training (1972-73), as viewed by participants in the training program. This information resulted in revisions of field experiences.

The initial trainee contact with children in the field setting occurs during the second quarter of participation in the program. These first-year students observe behaviors of exceptional and regular children in local elementary schools equipped with resource rooms and in early childhood centers in the city. The classroom visitations provide junior trainees the necessary opportunities for developing their competence in formal observation techniques.

During the second year of training, the field settings function as a laboratory for the development of diagnosis and intervention competencies. Micro-experiences are included for developing and demonstrating mastery of each of the diagnostic skills and for planning and implementing intervention strategies. The second-year field experience culminates with the negotiation and fulfillment of four performance contracts for pupil achievement.

OBSERVATION FIELD EXPERIENCES

The advantages of the observation field experiences worthy of preservation specifically mentioned by the first-year trainees (Table 13) were the experiences in the open classroom and in the preschools; the amount of time allotted to observation systems utilization; the freedom to observe many aspects of the educational process; and the inclusion of readings and written assignments describing the field experiences. The first-year students included several reasons for retaining field experiences as a major portion of the instructional process. Some of the reasons listed were that the observation field experiences increased the relevance of classroom learning; increased awareness of current conditions and realities of teaching; provided an opportunity to view both teacher and student responses; and provided an opportunity to see the application of behavior modification techniques. Recommended changes are presented in Table 14.

Table 13

Beneficial aspects of field experiences in observation worthy of preservation as related by junior trainees

1. Time allotted to field experiences.
2. Experiences in the pre-schools.
3. Inclusion of journal articles for current trends.
4. Comparison of the Project-associated schools with the regular schools.
5. Contact with the seniors at Moore School.
6. Sufficient time to use observation systems without being rushed or kept in the schools too long.
7. Observation of the open classroom.
8. Public school observation.
9. Moving around in the schools to see all aspects of the educational process.
10. Narrative requirement increased observation and attention.
11. Independent field experiences apart from the class at Leon Interfaith and Pineview schools.

Table 14

Junior trainee recommendations for modifying the field experiences in observation.

A. Orientation
    1. More preparation upon completion of the first quarter so that expectations will be more realistic.
    2. More explanation of the systems of observation.
    3. More time to become familiar with systems and related readings prior to school experience.
    4. More individualized instruction on the performance expected from each student.
    5. Observation format needs to be clarified.
    6. Lecture before going to the schools, telling what to look for.

B. Organization
  1. More observation of handicapped children.
  2. Less time in the pre-schools.
  3. More time in the Leon County Public Schools.
  4. Provide more selection of schools instead of 4 set locations.
  5. Provide greater variety of experiences.
  6. Have the break earlier in the quarter.
  7. Greater emphasis on seminar discussion, not lecture.
  8. Seminars should be more reflective to clear up problems arising from the field experience.
  9. Provoke more discussion from reticent students.
  10. More faculty/student interaction outside of seminar.
  11. More class meetings.
  12. Increase contact with school psychologist.

C. Resources
  1. More explanation or revision of Madsen's observation system.
  2. Eliminate Madsen's system.
  3. More explanation of Peters' observation system.
  4. Provide observers with maps of schools.

D. Assessment
  1. Earlier feedback on the school narratives.
  2. More feedback on observation systems reports.
  3. Need other means of assessing observational competencies.
  4. Less busy work — writing up articles, filling out forms.

The second-year trainees (Table 15) mentioned several of the same advantages of the observation field experiences that were listed by the first-year students. They included observation of both preschool and elementary school children, familiarization with public schools, the use of written reports, and the opportunity to observe more than one type of school setting. Some benefits perceived by the second-year trainees of their first-year experiences that were not mentioned by current first-year trainees were the opportunity to work with others, the exposure to more than one observation system, and the development of powers of observation which are valuable in diagnosis.

Recommendations for modification of the field experiences in observation were concentrated on problems in the organization of the experiences (Table 16). Specifically mentioned were the need for more observation of handicapped children, greater variety of experiences, more time in the public schools and less in the preschools, and greater emphasis on seminar discussions centered on problems arising from the field experience. Another recommendation suggested better orientation to the field experiences through increased explanation of the observation systems and clarification of the performance expected from each student.

Table 15

Beneficial aspects of field experiences in observation worthy of preservation as related retrospectively by senior trainees.

1. Familiarization with the public schools, their physical setups and teacher/administrator roles.
2. Opportunity to observe more than one type of school setting.
3. Observing both preschool and elementary school children.
4. Observing the physical characteristics of both regular classrooms and resource rooms.
5. Familiarization with the public schools so that during the diagnostic quarter the surroundings weren't totally new.
6. Being exposed to more than one observation system.
7. Developed powers of observation — of both teacher and pupil alike — which are valuable in diagnosis.
8. Experience of coming in contact with the observation techniques and using them in the field.
9. Having Dr. Madsen as a speaker.
10. Working with others.
11. Reports were effective in making one aware of the environment.

Table 16

Senior trainee recommendations for modifying the field experiences in observation.

1. Spend less time in each particular school.
2. Specific rules of protocol should be provided to avoid irritating teachers unwittingly.
3. The reports on the observations of school were very demanding; possibly a checklist would be more effective (to be included with a short narrative).
4. The first experience should be longer than the others.

Table 17
Beneficial aspects of field experiences in diagnosis and intervention worthy of preservation as related by senior trainees.

1. Being in a "real world" situation.
2. Familiarization with the school environment, children, teachers.
3. Opportunity to use materials that have been studied.
4. Spending four days a week in the schools.
5. Arrangement of testing two days and tutoring two days during diagnosis quarter.
6. Having both diagnosis and intervention at the same school.
7. Supervising teacher worked out a schedule of testing and tutoring that saved a lot of confusion.
8. Contact with master's students during diagnosis produced good feedback.
9. Contact with the resource room teacher.
10. Daily student-CTT interaction.
11. Opportunity to get to know those students we would work with in intervention.
12. Weekly visits of the Clinical Professor.
13. Opportunity to test average children first, exceptional children later.
14. Specification of gains to be made (writing up contract both in profile form and in modules).
15. Utilization of pre-posttest indication of gains made.
16. Utilization of several different diagnostic tests.
17. Seminar on how to write up profiles.
18. New profile sheets.
19. Good self-preparation of test administration prior to working in schools.
20. Utilization of various resources in the school.
21. Availability of reading modules during intervention.

Table 18
Senior trainee recommendations for modifying the field experiences in diagnosis and intervention.

A. Seminars
    1. Instruction on how to write up a profile prior to field experience.
    2. Instruction on most useful materials for resource room and their selection.

   3. Friday seminar should be used for individual appointments to air problems.
   4. Seminars need to be more pertinent.
   5. Full seminars may not be necessary.
   6. Provide better prepared seminars to help us in different approaches to reading and math — demonstrations, video-audio tapes, etc.

B. Personnel
   1. More supervision or guidance in the field.
   2. Assign master's students to schools for intervention quarter.
   3. Utilize instructors as models so we can see especially effective methods.

C. Resources
   1. Provide more manuals for some of the smaller tests.
   2. Provide math modules.
   3. More convenience in getting test forms.
   4. Less emphasis on formal diagnostic tests and more on criterion-referenced testing.
   5. More use, demonstration, and discussion of use of resources in the schools.
   6. Better testing facilities.

D. Instructional process
   1. Video tape teaching sessions in the schools.
   2. More feedback about teaching.
   3. Provide workshop on making materials.
   4. Discuss different remediations and children we are working with.

DIAGNOSIS AND INTERVENTION FIELD EXPERIENCES

The second-year students listed many advantages (Table 17) of their field experiences in diagnosis and intervention. They included utilization of materials that have been studied, the allocation of time to the field experiences, the contact with the pupils, and the utilization of various resources and diagnostic tests in the school.

Strongly emphasized was the advantage of being assigned to the field for four mornings a week with the opportunity to return for a campus based reflective or instructional seminar on Friday of each week. Another strength of the field based aspect particularly noted by the seniors was the responsibility for producing negotiated and specified pupil gains under close supervision and support of the Clinical Professor before being assigned to an independent full time internship.

Recommendations for modification of the field experiences in diagnosis and intervention were concentrated on the processes for using the Clinical Teacher Individualized Pupil Plan, utilization of Friday seminar time for both group and individual trainee needs, and the use of graduate students who had already successfully performed the tasks as cross-peer tutors (Table 18). In addition, it was recommended that more materials for use with exceptional children be made available in the campus-based instructional resource room. The survey of field experiences indicates that students in the program consider the training received in actual classroom settings to be one of the most beneficial aspects of the program. The student suggestions for improving and maintaining the quality of the field experiences were perceived as extremely insightful and beneficial.

SUMMARY

The formative evaluation results of the Clinical Teacher Model Project of the prototype curriculum (1972-74) provided the following information:

1. All of the students achieved mastery of the objectives at a high level of proficiency on all modules entered.
2. The students perceived many benefits from the program and generally expressed favorable attitudes towards the individualized, performance and field-based curriculum.
3. The students identified the problem areas so the curriculum team was able to correct these items in subsequent curricula revisions.
4. Time and resources utilized in achieving proficiency varied greatly among students.

Therefore, this evidence clearly documents the effectiveness of the Clinical Teacher preparation curriculum (Volume 1, Chapter 4) in producing the specified competencies for individualizing instruction.

REFERENCES

Turner, R.L. Levels of criteria. In B. Rosner (Ed.), *The power of competency-based teacher education: A report.* Boston: Allyn and Bacon, 1972.

CHAPTER 5

SUMMATIVE EVALUATION RESULTS

Summative evaluation results document the effectiveness of the Clinical Teachers in producing significant pupil gains with exceptional children in special education resource rooms. The successful attainment of this outcome demonstrates the value of this educational innovation. The significance of the evidence must be viewed in terms of the original goals and objectives of the Project. Essentially, the issue posed for the summative evaluation phase was: Does the Clinical Teacher produce significant pupil gains for the exceptional children served?

This fundamental issue was examined utilizing four specific questions:

1. Did the Clinical Teachers as a group and individually produce significant pupil gains in reading and arithmetic?
2. Did the Clinical Teachers use the competencies?
3. Did the Clinical Teachers produce significantly more gain in reading and arithmetic than was produced in the comparison group?
4. Were the Clinical Teachers more efficient in terms of children served?

TESTING PUPIL ACHIEVEMENT

The following information about the data gathering procedures applied to both Clinical Teacher and comparison groups:

1. The Metropolitan Achievement Test was administered in accordance with the specified directions contained in the test manual. Form F was administered during mid-October, 1974, and Form H during mid-May, 1975.
2. The Metropolitan Achievement Test was selected because of its established reliability in measuring reading and arithmetic.
3. The instructional period was 7 months—from October to May —in accordance with the directions in the Metropolitan Achievement Test *Teacher's Handbook*. This period is 7/10 of a year—based upon an average 10-month school year. The normal anticipated gain is one month for one month of instruction; 10 months is defined by the test publishers as an academic school year (See appendix F).

GENERAL RESULTS

1. All the Clinical Teachers produced significant pupil gains in reading and arithmetic.
2. The Clinical Teachers used the competencies "very frequently" as measured by the Clinical Teacher Competency Rating Scale.
3. The Clinical Teachers produced significantly greater pupil gains than the comparison teachers.
4. The Clinical Teachers effectively served a far greater number of exceptional children who were more educationally handicapped in terms of age-grade retardation than the comparison teachers.

These general results will be presented in detail in this chapter with the appropriate data and analysis in the following sections:

1. Clinical Teacher Analysis
   The description of the produced gain of the Clinical Teachers

and the populations with which they worked, and the frequency with which the Clinical Teachers used the specified competencies.

2. Comparison Group Analysis
The description of the comparison group gain and the populations with which they worked.
3. Effect of Treatment
The contrast between the produced pupil gains of the Clinical Teachers and comparison teachers.

CLINICAL TEACHER ANALYSIS

The Clinical Teacher group consisted of seven teachers in resource rooms for mildly handicapped children. The Clinical Teachers were employed in the states of Florida (4), Georgia (1), Pennsylvania (1), Virginia (1). Two of the rooms admitted educable mentally retarded, learning disability and emotionally disturbed children; two additional rooms admitted educable mentally retarded and learning disability children; and the remaining three were educable mentally retarded resource rooms. The eighth Clinical Teacher who graduated in June, 1974, accepted a position as a teacher of a self-contained class for the severely emotionally disturbed. Because she was unable to pre-test her children, the teacher was not included in this data presentation.

PUPIL ACHIEVEMENT

The children at the outset were believed to be mildly handicapped children, but after pre-testing it was determined that by generally accepted criteria for defining educationally relevant handicapping conditions, the students in the Clinical Teacher group as a whole appeared to be more moderately handicapped. For instance, the age-grade retardation revealed that the mean achievement of this group was 2.21, which is 3.5 years age-grade retarded. The generally accepted definition of two years academic retardation for the mildly handicapped was clearly exceeded. The total sample size was 88 with mean age of 10.51 at pre-test. This information is presented in the following table.

TABLE 19

Clinical Teacher Population: Pre-and Post-Test Mean Standard Scores and Mean Grade Equivalents in Total Reading and Total Arithmetic.

Test Level	N	CA	Pre-Test Total Read. S.S.	Pre-Test Total Read. Grade Equiv.	Pre-Test Total Arith. S.S.	Pre-Test Total Arith. Grade Equiv.	Post-Test Total Read. S.S.	Post-Test Total Read. Grade Equiv.	Post-Test Total Arith. S.S.	Post-Test Total Arith. Grade Equiv.
Primer	12	10.06	27.67		31.00		33.58		43.25	
Primary I, II, Elem., Intermed.	76	10.67	44.12	2.21	52.08	2.49	53.67	2.95	65.09	3.47

S.S.=Standard Score

The mean gain in grade equivalent for the Clinical Teacher group was .74 in reading and .98 in arithmetic. Based upon pre-test scores divided by the average months in school at the time of the pre-test, this represented an accelerated learning rate compared to previous years in school. For instance, based upon past performance, if the same skill acquisition rate had been maintained, it would have been predicted that the mean gain for this population would have been in the three to four month range. The actual gain was approximately twice that rate. Table 20 displays the mean gains in standard scores of students by individual Clinical Teachers.

TABLE 20

Mean Gains in Students' Standard Scores in Total Reading and Total Arithmetic by Individual Clinical Teachers.

Clinical Teacher	Pupil N	Mean Gains in Standard Scores Total Read.	Mean Gains in Standard Scores Total Arith.
1	22	6.68	11.77
2	10	11.00	29.20
3	11	5.82	7.64
4	7	9.71	12.86
5	15	8.40	7.47
6	10	16.20	18.20
7	13	9.23	9.00

TEACHER COMPETENCIES

The Clinical Teacher Competency Rating Scale was developed by the investigators to assess how many of the competencies each graduate used during the year. The instrument was designed as an equal interval graphic rating scale to assess competency utilization. One (1) indicated that the Clinical Teacher always used the competency, while five (5) indicated that the Clinical Teacher never used the competency. This composite measurement of major competencies defined as clinical teaching was administered in November and in May. Generally it was found that most of the teachers used most of the competencies throughout the school year. It was interesting to note that there was some variation in the use of the diagnostic and intervention skills between November and May. This is consistent with the anticipated role of a teacher and the fact that most of the new children requiring frequent use of diagnostic skills are assigned during the fall. By spring the population of the classes has stabilized and more effort is devoted to ongoing teaching or intervention activities. The results of the rating scale are presented below.

TABLE 21

Clinical Teacher Pre- and Post- Mean Competency Ratings

Clinical Teacher	N	Pre	Post
1	22	1.50	1.33
2	10	1.50	1.50
3	11	2.33	2.25
4	7	2.83	2.83
5	15	1.50	1.50
6	10	1.50	1.66
7	13	2.16	1.50

The variation of competency usage between the pre- and post-administration of the rating scale is further illustrated by the frequency count as displayed in Table 22.

TABLE 22

Pre- and Post- Frequency of Responses on Clinical Teacher Competency Rating Scale

Competency	Always		Very Frequently		Frequently		Seldom		Never		Group Mean	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1. Systematic Observation			1	3	2	2	4	2			3.43	2.80
2. Informal Observation	3	4	2	2	1	1	1				2.00	1.57
3. Normative Testing	3	3	2	1	1	2	1	1			2.00	2.14
4. Criterion Testing	5	4	1	2	1	1					1.43	1.71
5. Summary of Diagnosis	6	5		1	1			1			1.28	1.57
6. Wrote Pupil Plan	3	4	2	2	2	1	2				3.00	2.00
7. Selected Modules	5	5	1	1		1	1				1.57	1.43
8. Specified Contingencies	5	5	1	2	1						1.43	1.29
9. Wrote Perform. Contract	3	2		2	1	1	1		2	2	1.85	2.71
10. Conducted Instruction	7	5	0	2							1.00	1.29
11. Monitored Pupil Perform.	5	5	1	2	3						2.28	1.29
12. Evaluated Effect. & Efficiency	3	4	1	1	3	2					2.00	1.71

INDIVIDUAL CLINICAL TEACHER PERFORMANCE

An individualized instructional system focuses upon the unique characteristics of teachers and children. The importance of individual teacher and pupil performance is frequently masked by presentation of group data. The Project's emphasis in individualizing instruction and the effect of this strategy on individual learners requires attention to the performance of individuals. In addition, the value or impact of individualized instruction on individual children should be the ultimate concern of special educators.

It should be noted that the Clinical Teacher illustrated in this section produced significant pupil gains in reading for seven of the ten children served. In arithmetic, eight of ten children gained significantly. Significant gain is defined as six months or more in grade equivalency in reading and arithmetic during seven months of instruction. Even more impressive was the fact that four individuals gained more than two years in reading. This information is presented in Table 23.

TABLE 23

Individual Clinical Teacher (#6) Performance Illustrating Pupil Gains.

Pupil	CA	Total Reading					Total Arithmetic				
		Pre-Test		Post-Test		Gain	Pre-Test		Post-Test		Gain
		Stand. Score	Grade Equiv.	Stand. Score	Grade Equiv.		Stand. Score	Grade Equiv.	Stand. Score	Grade Equiv.	
1	10.04	61	3.5	69	4.4	.9	76	4.3	82	4.9	.6
2	9.07	43	2.0	42	2.0	-0-	58	2.8	60	3.0	.2
3	8.06	27	1.4	43	2.0	.6	45	1.9	51	2.3	.4
4	10.09	18	1.2	59	3.3	2.1	60	3.0	75	4.5	1.5
5	13.02	48	2.3	62	3.6	1.3	38	1.6	70	3.7	2.1
6	10.00	53	2.7	78	5.6	2.9	73	4.0	84	5.2	1.2
7	11.03	60	3.4	85	6.7	3.3	68	3.6	92	6.4	2.8
8	9.05	52	2.6	51	2.5	-.1	55	2.5	62	3.1	.6
9	12.05	65	3.9	67	4.2	.3	65	3.3	78	4.5	1.2
10	12.02	34	1.6	67	4.2	2.6	61	3.1	82	4.9	1.8

The value of this instructional strategy for individuals is reaffirmed when analyzing the scores of individuals. These scores show that with the amount of gain produced in the seven month intervention period some of the children achieved competency in reading which enabled them to overcome the age-grade retardation. The implications of these results for returning the children to the mainstream with the skills required for successful performance are enormous. These encouraging results for individuals who had typically achieved at less than one-half normal rate during the elementary school years demonstrates that the rate of skill acquisition can be dramatically increased and that the children can be returned to regular classes. It should also be noted that this same teacher (#6) had one of the highest mean scores for the utilization of the competencies.

The continuing challenge to maximize the educational opportunities for all children also is illustrated by this teacher's performance. Even with the individualized instructional system employed, three of the children gained very little. This again reinforces the fundamental belief that no one system can fully meet the needs of every child.

COMPARISON GROUP ANALYSIS

The comparison group consisted of teachers in eight resource rooms for mildly handicapped children in the Duval County, Forida, School System. These classes were provided by the Director of Exceptional Child Education, Duval County. Duval County was selected as the site for the comparison group due to the local interest there in the resource room approach and the availability of eight resource rooms in one county within a reasonable distance from Tallahassee.

The total sample size was 59 with a mean age of 9.58 at pre-test. This produced an average age-grade retardation at pre-test of 2.36 in reading and 2.50 in arithmetic. At post-test this mean age-grade retardation in the comparison group increased to 2.54 in reading and 2.84 in arithmetic. This age-grade retardation is well within what is considered normal for a mildly handicapped population. The comparison group population is described in Table 24.

TABLE 24

Comparison Group Population: Pre- and Post-Test Mean Standard Scores and Mean Grade Equivalents in Total Reading and Total Arithmetic.

Test Level	N	CA	Pre-Test				Post-Test			
			Total Read.		Total Arith.		Total Read.		Total Arith.	
			S.S.	Grade Equiv.	S.S.	Grade Equiv.	S.S.	Grade Equiv.	S.S.	Grade Equiv.
Primer	32	9.63	36.31		42.63		39.44		46.22	
Primary I, II, Elem., Intermed.	27	9.53	45.07	2.20	45.67	2.06	50.04	2.61	50.04	2.31

S.S.=Standard Score

The mean gain in grade equivalents for the comparison group was .41 in reading and .25 in arithmetic. Based upon pre-test scores divided by average months in school at the time of the pre-test, this represented a fairly consistent rate of skill acquisition. For instance, the average pre-test level in reading was 2.20 for a group with an average chronological age of 9.53. A child of this age would have averaged 3½ years in school or 35 months, assuming that the child entered at age six and attended an average of ten months per year.

EFFECT OF TREATMENT

The Clinical Teacher and comparison teacher are the two distinct types of teachers in this study. The former graduated from the Clinical Teacher Model Teacher Preparation Program of the Florida State University, while the latter were trained in other types of preparation programs. All teachers in both groups hold appropriate state certification in exceptional child education. This study focused upon the produced pupil gain in the two basic academic achievement areas of reading and arithmetic. The achievement was further operationally defined as the score derived from the administration of the Metropolitan Achievement Tests. Standard scores were selected as the primary method for making comparisons because these scores are comparable over all test levels. Grade equivalent scores are obtained only from the Primary I, Primary II, Elementary and Intermediate Batteries. It is not possible to obtain a grade equivalent for the primer level test. All the raw scores concerning both groups are presented in Appendix I. Only those students who were enrolled in the programs at the time of both pretest and post-test were included in the samples. Therefore, the total sample size for the Clinical Teacher group was 88. Ten students were lost during the academic year. In the comparison group 59 students remained with a loss of 16 during the academic year. Tables 25 and 26 present for each of the fifteen classes the number of pupils, their mean ages, and the mean standard scores in reading and arithmetic.

TABLE 25

Mean Standard Scores: Reading and Arithmetic for Individual Classrooms — Clinical Teacher Group

Teacher No.	1		2		3		4		5		6		7	
No. of Pupils	22		10		11		7		15		10		13	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Mean Age	10.51	11.07	10.28	10.86	10.93	11.51	12.43	13.01	10.47	11.05	10.76	11.34	9.13	9.71
S.D	1.86	1.86	.58	.58	1.79	1.79	1.25	1.25	1.40	1.40	1.49	1.49	1.13	1.13
Mean Reading	35.32	42.00	34.70	45.70	49.36	55.18	46.71	56.43	48.13	56.53	46.10	62.30	39.08	48.31
S.D.	9.95	11.47	11.83	9.58	7.72	9.80	4.61	11.21	10.76	10.24	15.52	14.04	11.62	12.65
Mean Arith.	40.68	52.46	30.70	59.90	57.36	65.00	59.43	72.29	60.33	67.80	55.40	73.60	47.85	56.85
S.D.	11.14	13.07	9.35	15.60	17.97	16.53	13.30	8.36	12.09	14.14	22.15	12.70	11.61	12.52

TABLE 26

Mean Standard Scores: Reading and Arithmetic for Individual Classrooms — Comparison Group

Teacher No.	1		2		3		4		5		6		7		8	
No. of Pupils	9		14		7		4		5		5		9		6	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Mean Age	9.76	10.34	9.58	10.16	9.12	9.70	10.19	10.77	9.55	10.13	8.58	9.16	8.93	9.51	11.31	11.89
S.D.	0.81	0.81	0.92	0.92	0.88	0.88	1.28	1.28	1.23	1.23	0.50	0.50	1.43	1.43	0.80	0.80
Mean Reading	37.00	43.11	39.00	44.00	36.00	35.43	50.75	56.50	42.60	51.40	34.40	41.20	46.11	48.33	40.83	40.88
S.D.	4.03	3.33	6.82	8.88	5.89	5.13	4.11	13.80	6.91	11.99	7.67	9.99	11.54	9.25	5.60	4.22
Mean Arith.	47.44	51.56	45.57	69.14	43.29	68.57	55.00	68.00	47.20	57.60	35.20	34.40	38.41	37.56	42.67	54.67
S.D.	10.71	9.60	8.98	10.22	7.37	8.50	3.46	16.27	11.78	12.76	4.32	6.19	9.03	8.14	4.80	4.62

It should be emphasized that at pre-test both groups of children were essentially equivalent in total reading achievement and only slightly different in arithmetic. This information on mean scores before computing the regression of gain scores is presented in Table 27.

TABLE 27

Mean Standard Scores for Clinical Teacher and Comparison Groups in Reading and Arithmetic

	Clinical Teacher Group		Comparison Group	
Number of Pupils	88		59	
	Pre	Post	Pre	Post
Mean Age	10.51	11.07	9.58	10.16
S.D.	1.64	1.64	1.19	1.19
Mean Reading	41.88	50.58	40.32	44.42
S.D.	12.03	13.95	8.13	9.53
Mean Arith.	49.21	60.57	44.05	48.98
S.D.	16.79	17.17	11.26	12.48

In order to test the statistical significance of the difference between the two groups, an analysis of co-variance was used. The adjusted mean standard scores and the estimates of the within-group and between-group regression coefficients for the covariant of age and pre-test are presented in Table 28.

TABLE 28

Adjusted Mean Standard Scores for Clinical Teacher and Comparison Groups in Reading and Arithmetic

	Reading	Arithmetic
Adjusted Mean Clinical Teacher Group	50.16	60.25
Adjusted Mean Comparison Group	45.58	51.77
Within-Group Regression Coefficient		
Age	.75	1.88
Pre-Test	.80	.57
Between-Group Regression Coefficient		
Age	.65	5.34
Pre-Test	3.81	1.59

STATISTICAL SIGNIFICANCE

The contrast between the Clinical Teacher group and the comparison group showed significant differences between reading means (F_1, 143=11.648) and between arithmetic means (F_1, 143=22.866). The F ratio for both reading and arithmetic is statistically significant at or beyond the .01 level. Age and pre-test scores are the two variables which were identified as contributing to the initial differences between groups and as such were used as the co-variates. A control on the biasing effects of the selected covariant on the criterion scores at the post-instructional period can be achieved by analyzing the variances of the criterion scores which exist between and within the two groups, while linearly adjusting for the initial mean differences in the age and pre-test scores of the two groups. Such an analysis of the standard scores in reading and arithmetic, assuming equal regression slopes for the two groups, showed that the adjusted mean scores in both reading and arithmetic for the two groups are statistically different.

SUMMARY OF RESULTS

The summative evaluation results provided documentation that:

1. The Clinical Teachers both as a group and individually produced significant gains in both reading and arithmetic.
2. The Clinical Teachers as a group and individually used most of the specified competencies most of the time.
3. The Clinical Teachers produced more gain than the comparison group teachers in both reading and arithmetic beyond the .01 level of statistical significance.
4. The Clinical Teachers served almost twice as many students as the comparison teachers and the students of the Clinical Teachers were from a variety of traditional special education categorical areas.

LIMITATIONS

The readers are respectfully cautioned when interpreting the results of this study, and especially when generalizing the results to other populations. While the investigators have full confidence in the findings, there are accepted limitations within any quasi-experimental design which suggest conservative interpretations.

CHAPTER 6

EFFECTIVENESS OF THE MODEL

Evaluation research of the Clinical Teacher Model documented the effectiveness of an alternative, noncategorical teacher preparation program for special education. Formative evaluation results clearly determined that the individualized performance-based teacher education curriculum enabled the trainees to demonstrate the clinical teaching competencies. Summative evaluation findings indicated that the Clinical Teachers, using these competencies, produced statistically significant reading and arithmetic gains in exceptional children in contrast with a comparison group of special education teachers serving essentially similar exceptional children.

The effects of clinical teaching are documented in this Final Report of the Clinical Teacher Model Project. This chapter presents a summary of the project, discussing implications and recommendations.

SUMMARY

The Clinical Teacher Model Project was developed in the College of Education at the Florida State University in Tallahassee, Florida. The individualized performance-based instructional curriculum prepares teachers to serve mildly handicapped children, including the educable mentally retarded, learning disabilities, and emotionally disturbed. Students who graduate from the NCATE and state approved program receive their bachelor's and master's degrees simultaneously, as well as teaching certificates in mental retardation, learning disabilities, emotional disturbance and varying exceptionalities from the State of Florida.

The basic philosophy is that common academic and social behaviors or skills can be identified which will enable the mildly handicapped child to succeed in a regular classroom, regardless of the categorical disability. In turn, generic competencies for individualizing instruction are required for the teacher to deal successfully with children with a range of handicapping conditions. The Project identified necessary pupil skills in reading and arithmetic. Required competencies for the Clinical Teacher include observation, diagnosis, intervention, and evaluation. Junior trainees proceed through a sequenced modular curriculum and observe special classes at local pre-schools and elementary schools, while seniors work on diagnosis and intervention skills in public schools. Master's-level trainees intern in various parts of the state of Florida.

Individual modules are the basic framework for the instructional program. Each module provides the trainee with objectives, instructional activities, and criteria for demonstrating competencies. Students confer with the Clinical Professor to negotiate and contract for instructional options to be used for each module.

This individualized instructional system frees faculty from traditional information-giving activities, and allows them to work personally and creatively with a large number of students. Data on student progress in individual modules and through the entire program are stored and reported by a computer.

Formative and summative evaluation research procedures were designed to determine the effectiveness of the Project as an alternative teacher education program. The fundamental issue of the formative evaluation phase was: Did the Clinical Teacher Model Project curriculum produce the specified competencies in the trainees? Based upon the formative evaluation results the answer to this question is clearly positive — the graduates of the Program achieved the competencies at a very high proficiency level and demonstrated these competencies in various phases of the preparation program. In addition, the trainees expressed positive attitudes

towards the program and felt that there were many benefits derived from the individualized performance-based curriculum.

The fundamental issue of the summative evaluation phase was: Do the Clinical Teachers, using the competencies, produce significant pupil gains for the exceptional children served? The summative evaluation research results revealed that the Clinical Teachers produced significant gains in reading and arithmetic, and that the Clinical Teachers utilized the competencies consistently and with a high frequency rate. The results also revealed that the Clinical Teachers served more children who were more moderately handicapped in terms of age-grade retardation, and produced more academic gain than the teachers in the comparison group at or beyond a .01 level.

IMPLICATIONS

Recommendations for other professionals wishing to institute a Clinical Teacher curriculum are displayed in two formats: (1) for those who wish to create their own model and (2) for those who wish to modify and use the model already developed at Florida State University.

1. Suggestions for "innovators" are:

An interdisciplinary team for model development

In order to develop a model similar to that used at Florida State, a planning team is required whose members can fulfill three major roles: (1) designer (curriculum reform); (2) experimental "try-out" teacher; and (3) instructional systems/technology evaluator. These people must have not only content experience, but also managerial and process skills, and, equally important, must be able to work well together as an interdisciplinary team.

High-risk capital

A program such as this involves fairly innovative research, and this requires a good deal of high-risk capital for research and development activities over an extended period of time. Funding for a period of five years is needed for development and field testing of a new Clinical Teacher Model.

A student "try-out" population

Student-trainees should be involved from the beginning of the program, and this participation should continue through all phases to summative evaluation to assure the program continual feedback in design and implementation from a relatively stable testing population.

Reality testing of the marketplace

Involvement of consumers is criticial in the planning phase of such an effort so the program developers can get a realistic needs assessment of the marketplace. Otherwise, graduates of such an innovative project may find that their skills are too far advanced for the needs of the community.

2. Implications for program "adopters" are:

An introduction to the system

The adoption of an innovative model requires major curriculum changes. A minimum two-week, in-service summer workshop is needed to orient and train future participants in the program.

Faculty skills in systems technology

Any university wishing to adopt the current model should have at least one faculty member who is skilled in systems technology and evaluation; these skills are essential not only for the successful operation of the program, but also for the initial interpretation of program requirements and activities to other faculty members who do not possess such knowledge.

Participation in outside training institutes

Institutes in leadership training and innovative teacher training are frequently offered in various regions and by the Bureau of Education for the Handicapped. Those wishing to implement a model such as the one at Florida State should encourage their staff to take part in such institutes.

Administrative commitment to the program

Members of an educational institution wishing to institute such a program should first ensure administrative support of such an effort, since the transition from a time-based to a performance-based curriculum requires a number of accompanying changes in faculty and student roles, record-keeping and other administrative activities.

RECOMMENDATIONS FOR TEACHER PREPARATION

Clinical teaching (skills of observation, diagnosis, intervention, and evaluation) is essentially a judgmental process on behalf of the teacher, based upon the information processing made possible by these skills. Clinical teaching as a composite teacher behavior is dependent upon a personalized interaction with the pupil in obtaining information for improving both teaching and learning.

The ultimate impact of this strategy is the effect upon children in terms of their successful attainment of academic and social skills.

The content and process of clinical teaching subscribes to the fundamental belief in the common academic and social behaviors required of exceptional children to succeed in school. Individual differences of exceptional children relate essentially to entry level on a continuum of skills and their varying learning styles.

In appraising each child's educational needs, it is desirable to perform a comprehensive assessment culminating in an Individualized Pupil Plan with specified objectives and resources. If this is done, the educational program for each child would differ according to his or her individual needs. Children who have learning problems should have programs specifically designed for their educational needs. Individual needs can be determined and individual learning goals established so that each child will be taught according to his own unique characteristics. If comprehensive diagnostic, prescriptive, corrective, remedial, or developmental learning programs with curricular continuity were established for each student, both educational and social retardation should be significantly reduced. With this emphasis, teacher educators can impress prospective teachers with the importance of academic and social achievements for the mildly handicapped child, and can emphasize the fact that their primary responsibility is the academic and social success of their children. Teachers then can develop and implement a custom-tailored and comprehensive program for teaching basic academic and social skills. The data from the Clinical Teacher Model Project suggests the following recommendations for special education teacher preparation:

1. Teachers can be prepared to individualize instruction for exceptional children. Generic teacher competencies for individualizing instruction can be identified and produced.
2. Noncategorical teacher preparation is effective; therefore interested university faculty members could pursue this type of preparation program.
3. Since a teacher with specified competencies can effectively teach children from a variety of traditionally defined categories of exceptionalities, state certification patterns could become more inclusive.
4. Performance-based program models with emphasis on early and continuing field experiences should be encouraged.
5. Due to the variety of philosophical, methodological, and maturational considerations, a five-year combined BS/MS program is feasible in teacher education.
6. The management of student data on a computer system may be the most meaningful use of a computer in education in an individualized instructional system at the present time.

7. The adoption or design of a formative analysis model is an innovative method for collecting pertinent information on a specific curricular modification. This information should be collected when designing and field-testing new methods of delivering instruction in university settings. The useful formative analysis model can determine the effects of instruction and accurately monitor the process while providing in-cycle information for improving instruction.
8. Summative evaluation research procedures can be effectively designed and implemented to provide decision-making information as to the viability of innovative alternative teacher education programs and their impact on children in actual classrooms.
9. Teachers can be taught by faculty modeling the very process the content is designed to provide. The belief that "teachers teach the way they were taught" was reinforced in this Project.

RECOMMENDATIONS FOR TEACHING EXCEPTIONAL CHILDREN

Mildly handicapped children can succeed academically if educators develop the relevant educational data on each child — data which will sequentially lead them to select the appropriate learning goals and outcomes matched with resources and strategies. Mildly handicapped children must achieve at an even faster rate than normal if they are ever to attain educational levels commensurate with their peers in terms of age-grade status. Therefore special methods of instruction need to be used which provide the best possibilities for remediating the academic retardation.

In view of the findings of the Clinical Teacher Model Project, the following recommendations appear appropriate as they relate to the education of mildly handicapped children:

1. Academic programs should be individualized for each student if significant pupil gains are to be produced in the least restrictive environment such as a resource room.
2. The Clinical Teacher desired academic behaviors of reading and arithmetic, used within an individualized instructional program, can produce significant academic gains.

RECOMMENDATIONS FOR EVALUATION RESEARCH ON TEACHING

Evaluation research on teaching and learning in "real world" classrooms provides unusual opportunities for defining and measuring the composite effects of teaching on children. Designs and instrumentation which emphasize the examination of macro teaching behaviors appear most appropriate to the problems posed. Decision makers requiring information on the effectiveness of innovative instructional alternatives should be encouraged by the data made available by these procedures. The effect of instruction on children offers dramatic evidence of the impact of change.

The utilization of formative and summative evaluation research procedures in this Project suggests the following recommendations:

1. Evaluation research on teacher competencies and their relationship to produced pupil gains should be encouraged.
2. Evaluators and researchers should be supported in order to study and document relationships among learner, task and resource characteristics, referred to as aptitude-treatment interactions.
3. The Clinical Teacher desired pupil behaviors in reading and arithmetic should be validated. The placement of the skills in the hierarchy should be empirically determined.
4. The use of these curricular materials with normal children should be explored.
5. Evaluation research should be stimulated in public school programs. Designs should be matched to the problems and questions posed in studying teaching and learning in actual classrooms.
6. Evaluation research in teacher education should study both the pre-service and in-service training phases. Renewal strategies for public school teachers and faculties of colleges and universities should be based upon evidence of effective teaching and learning.
7. The Clinical Teacher products and results of their effectiveness are worthy of further study. Specifically, this study could include larger numbers of teachers and children. Student rate of learning should be assessed several times in a full year prior to intervention. Change in that rate of learning could then be more fully attributable to the intervention strategies. Documentation of this information in a generalizable research mode has major implications for programs for mildly handicapped children served in resource rooms where the goal is to return the child to the regular school program. Follow-up of successful children over a period of 1 to 2 years would provide additional convincing evidence of the effective alternative instructional system.

RESEARCH, DEVELOPMENT AND DIFFUSION

The ultimate value of this Project may very well be viewed in terms of its impact on other colleges and universities in the manner in which teachers are prepared. The extent to which the Clinical Teacher Model Project affects the preparation of teachers and the impact they have on children will eventually reflect on the value of research and development in education.

Without planned and supported linkages with potential consumers, the real effect of research and development is minimal. Systematic diffusion activities provide the academic community with the opportunities for adaptation and/or adoption of this effective innovative instructional alternative. Leadership preparation for utilizing and transplanting components of the Model are prerequisite to the successful implementation of products produced by research and development activities.

The value of research and development on education outcomes and processes largely rests upon the following question: Are R & D funds to be used for Research and Development to improve teaching and learning or are they to be used to Re-Discover what was once discovered and lost?

APPENDICES

APPENDIX A

CLINICAL TEACHER TRAINEE POPULATION

First Class 1970-73	Second Class 1971-74	Third Class 1972-75
Adams, W	Broska, K	Brezin, M
Auten, L	Hodges, K	Choppin, S
Barrios, R	Lipner, L	Cohen, A
Kelly, J	Maxson, B	Colonna, K
Kotick, L	Patrick, F	Griffin, S
Schert, D	Thiebaud, C	Maltby, J
Thornton, R	Vloedman, K	Olson, D
Travers, W	Williams, G	Ormerod, C
Walters, C		Phillips, A
Willbur, T		Stygar, T

APPENDIX B

CRITERIA FOR OBJECTIVES
PERFORMANCE OBJECTIVES RATING SCALE
CRITERIA FOR PERFORMANCE MEASURES
PERFORMANCE MEASURES RATING SCALE

CRITERIA FOR OBJECTIVES

The following rating sheet for evaluating performance objectives was derived from the Florida Department of Education technical specifications for catalogs of objectives and assessment items. Each objective should be judged according to the seven criteria: situation, action, object, limits, measurability, communicability, and criterion.

Directions

1. Enter the identification number of each objective to be evaluated in the left column of the rating sheet.
2. judge each objective according to the seven criteria provided.
3. In the appropriate criterion column for each objective, enter your judgment of the objective's quality as follows:

Adequate
Questionable (leave blank)
Inadequate

CRITERIA FOR OBJECTIVES

Situation

Adequate — The learning conditions are clearly specified.
Questionable — The learning conditions are vague or possibly irrelevant.
Inadequate — Little or no reference to the learning conditions is included.

Action

Adequate — The learning activities are specifically defined.
Questionable — The learning activities are over-generalized or possibly irrelevant.
Inadequate — The learning activities are not specified.

Object

Adequate — A precise statement of the focus of the activities is included.
Questionable — The relationship between the activities and the object of the activities is unclear.
Inadequate — The activities lack any clear focus.

Limits

Adequate — The learning activities are clearly limited.
Questionable — Termination criteria for learning activities are vague.
Inadequate — There is no way to tell when the activities will terminate.

Measurability

Adequate — Evaluation procedures are clearly specified.
Questionable — Evaluation procedures are vague or possibly inappropriate.
Inadequate — No procedures for evaluation are included.

Communicability

Adequate — Misinterpretation of the objective is highly unlikely.
Questionable — Clarity of the objective is doubtful or requires an unrealistic vocabulary.
Inadequate — The objective is obviously ambiguous and needs revision.

Criterion

Adequate — Mastery requirements for the objective are obvious.
Questionable — Desired proficiency levels are vague or subject to misinterpretation.
Inadequate — No indication of desired proficiency is provided.

PERFORMANCE OBJECTIVES
Rating Sheet

Objective	Situation	Action	Object	Limits	Measurability	Communicability	Criterion

CRITERIA FOR PERFORMANCE MEASURES

The following rating sheet for evaluating performance measures was derived from the Florida Department of Education technical specifications for catalogs of objectives and assessment items. Each item should be judged according to the five criteria: congruence, comprehensibility, objectivity, integrity, and equivalence.

Directions

1. Enter the identification number of each item to be evaluated in the left column of the rating sheet.
2. Judge each item according to the five criteria provided.
3. In the appropriate criterion column for each item, enter your judgment of the item's quality as follows:

Adequate
Questionable (leave blank)
Inadequate

CRITERIA FOR PERFORMANCE MEASURES

Congruence

Adequate — Direct correspondence exists between the task specified in the item and the performance specified in the objective.

Questionable — Partial correspondence exists between the item and objective but not with respect to all the following: situation, action, object, and limits.

Inadequate — The item requires a completely different performance than that specified in the objective.

Comprehensibility

Adequate — Misinterpretation of the item is highly unlikely.

Questionable — Clarity of the item is doubtful or requires an unrealistic vocabulary.

Inadequate — The item is obviously ambiguous or difficult to understand and needs revision.

Objectivity

Adequate — The performance criterion is so clearly stated that all competent observers would be expected to render equivalent judgments.
Questionable — Inter-judge reliability in scoring the item would likely be low.
Inadequate — Performance criteria are arbitrary or totally missing.

Integrity

Adequate — The item provides sufficient evidence that the corresponding objective has been achieved.
Questionable — It might be possible to pass the item without accomplishing the objective.
Inadequate — Additional evidence would definitely be necessary to confirm mastery of the objective.

Equivalence

Adequate — Parallel items measure exactly the same behavior. (Identical performance would be expected on all parallel items.)
Questionable — "Parallel" items appear to have doubtful content validity.
Inadequate — Zero correlation between responses on the "parallel" items would be expected.

PERFORMANCE MEASURES

Rating Sheet

Item	Congruence	Comprehensibility	Objectivity	Integrity	Equivalence

APPENDIX C

SURVEY OF FIELD EXPERIENCES

Procedures

In March, 1973 an open-ended questionnaire was administered to all first- and second-year trainees soliciting their reactions to the Clinical Teacher Model field experiences. The questionnaire requested information on benefits of, and suggested revisions for, the field experiences in which they had participated during the current school year. In addition, the second-year students were invited to evaluate their first-year field experiences. The forms employed in the survey are presented below.

Junior Field Experiences

Your previous responses have been most helpful in identifying problems and benefits associated with the Clinical Teacher Program. We have attempted to alleviate some of the more pressing problems and will address others during forthcoming revision efforts. In addition, we would like to consider any specific modifications of the observation portion of the trainee field experiences that might improve the quality of the experiences for future trainees. Your further cooperation will be sincerely appreciated.

PART I

Please list the most beneficial aspects of your observation experiences during the past quarter; that is, indicate the program characteristics that definitely should be preserved during revision considerations.

PART II

Please list any modifications in the observation experiences that, in your opinion, would enhance the quality of the experiences and lead to greater competency of the participants with respect to the observation process.

Senior Field Experiences

Your previous responses have been most helpful in identifying problems and benefits associated with the Clinical Teacher Program. We have attempted to alleviate some of the more pressing problems and will address others during forthcoming revision efforts. In addition, we would like to consider any specific modifications of the diagnosis and intervention portions of the trainee field experiences that might improve the quality of the experiences for future trainees. Your further cooperation will be sincerely appreciated.

PART I

Please list the most beneficial aspects of your diagnosis and intervention experiences during the past two quarters; that is, indicate the program characteristics that definitely should be preserved during revision considerations.

PART II

Please list any modifications in the diagnosis and intervention experiences that, in your opinion, would enhance the quality of the experiences and lead to greater competency of the participants with respect to the diagnosis and intervention processes.

APPENDIX D

SURVEY OF PROBLEMS AND BENEFITS ANALYSIS CLINICAL TEACHER MODEL EVALUATION UNANTICIPATED OUTCOMES

Part I: Problem Survey

An essential element in the development of an innovative project is the revision or remodeling necessitated by unanticipated problems arising during initial implementation of the project. Such problems are to be expected in an original program and deter from the project only if they remain unresolved. Effective revision of the program is dependent upon systematic identification and evaluation of the problems which may inhibit the successful completion of the stated objectives.

The persons who are most directly involved in a given project are capable of identifying the most acute problems. Simply by asking such individuals to state the major problems or difficulties that have been encountered, a fairly complete list of problems can be generated.

Although the opinions of those most directly involved in a project are always relevant in some sense, individual opinions are often unreliable and so diverse as to be meaningless unless quantified and treated collectively in a systematic way. Once written opinions have been obtained from project personnel, quantification can be accomplished by reducing these statements to a set of items that elicit standard responses which can be measured to determine the severity and prevalence of the identified problems.

Procedures

The procedures for problem assessment utilized in the Clinical Teacher Project followed the general outline described above. The initial survey instrument employing free responses in the identification of the problem situations in the program was distributed to all trainees enrolled in the program.

Content analysis and systematic sorting of the free responses reported in the survey instrument led to the development of follow-up questionnaires. Since trainees at different points in the program encounter different problem situations, unique questionnaires evolved for the three training levels.

The follow-up questionnaires were administered to the students at each training level. In addition, students at the second and third year training levels were given the preceding level's follow-up questionnaire in order to determine the persistence of problems throughout the program.

An essential process in the implementation of an innovative curriculum is to determine the need for revisions based upon negative side-effects and positive aspects emerging from initial field testing. Systematic identification and evaluation of these problems and benefits provides the curriculum team with information, which in addition to the actual performance data, is used for on-going revision and improvement of instruction.

The prototype teacher education curriculum (fall, 1972) was utilized for both juniors and seniors for the 1972-73 academic year. The project team believed it was important to assess trainee attitudes regarding their experience with this revision. Therefore, a systematic survey of student attitudes was conducted in November, 1972, and again in May, 1973. The instruments employed to identify and evaluate trainee attitudes were four survey questionnaires. The first two were free-response questionnaires; one requested statements of problems related to the program; the other requested statements of advantages or benefits. Content analysis and systematic sorting of the free responses reported in these two instruments led to the development of two follow-up questionnaires (one for problem analysis and one for benefit analysis), consisting of set items with a four-point opinion scale. These follow-up instruments were administered to the first- and second-year trainees in the program. The data analysis included collapsing the four-point scale of each instrument into two categories: problems and benefits.

Problems Category

1. Problems related to goals and objectives of instruction
2. Problems related to the process of instruction
3. Problems related to the instructional resources
4. Problems related to the group seminars
5. Problems related to the assessment of performance

Benefits Category

1. Advantages for trainees related to their career aspirations
2. Advantages for trainees related to their current role as students

3. Advantages for trainees related to instructional system employed
4. Advantages for trainees related to their anticipated competencies
5. Advantages related to future exceptional children to be served

Part II: Benefit Analysis

For formative evaluation purposes, problematic situations provide primary indicators of program revision needs. The problem survey reported in the previous section was primarily concerned with the identification of various aspects of the Clinical Teacher Program which are in greatest need of modification and improvement. Although less useful for revision efforts, additional consideration of both intended and unanticipated benefits from the program provides a more balanced perspective of the total impact of the program. The Clinical Teacher Trainees were surveyed in order to determine their attitudes toward the positive aspects of the program and their perceptions of potential benefits of the program for themselves and for their future students.

Methodology

The procedures used for the benefit analysis were similar to the procedures employed for the problem survey. An initial free-response questionnaire was distributed to the first- and second-year trainees. The responses from both levels were analyzed and, because of the similarity between responses obtained from the first- and second-year students, a single follow-up instrument was constructed rather than separate instruments for each level as previously prepared in the problem survey. The following four-point opinion scale was employed: 1. not an advantage or benefit; 2. minor advantage or benefit. 3. major advantage or benefit; 4. outstanding advantage or benefit. For the follow-up instrument the free-responses were grouped according to the following categories:

I. Immediate and long-range advantages of the CT program for you
    A. Advantages or benefits related to personal aspirations
    B. Advantages or benefits related to your current role as a student
    C. Advantages or benefits related to your expected role as a Clinical Teacher
II. Immediate and long-range advantages of the CT program for your future students
    D. Advantages or benefits for the students related to your competencies

E. Advantages or benefits for the students related to the teaching method
F. Advantages or benefits for the students related to teaching philosophy

Space was provided at the end of each section for additional advantages which had not been recorded on the initial instrument or which had arisen since the original benefit survey. This second survey instrument was distributed to both levels.

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

PROBLEM IDENTIFICATION

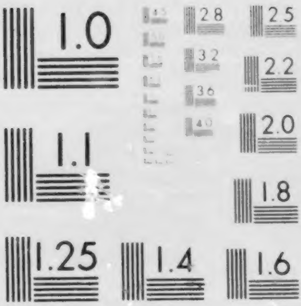
Status: 1 2 3

Unforeseeable problems typically arise during the development and implementation of innovative projects. Success of the program depends in part upon the identification and solution of these problems.

Your cooperation is needed in the first phase of the problem solving process; that is, the identification of situations or conditions which tend to limit the effectiveness of the Clinical Teacher training program. Your responses will be used in developing the second problem solving phase related to determination of problem severity.

Directions

In the space below list problems of any nature which, ***in your opinion,*** interfere with the success of the CT training program and/or with your success as a student in the program. Your individual responses will be kept in strictest confidence. PLEASE BE FRANK.


1.0
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

PROBLEM SURVEY/JUNIORS

Directions

Below are listed problems and situations which were mentioned on the previous survey instrument. The purpose of this questionnaire is to determine the intensity of these problems and to identify new problems which may have arisen.

Please *circle* the response which best indicates your opinion concerning the severity of each problem at the present time.

At the end of each category of problems there is a space for writing in other situations which have not been previously identified as problems.

After marking your responses, please choose the *ten* problems, which in your opinion, most inhibit the success of the Clinical Teacher Program. Circle the *numbers* of the ten items selected.

I. *Problems Related to the Instructional Process*

	Not a Problem	Not Serious	Serious	Very Serious
1. Difficulty in adjusting to the type of instruction used in the program.	1	2	3	4
2. Inadequate provision for transition from traditional methods of instruction.	1	2	3	4
3. Lack of consideration given to student differences in the instruction.	1	2	3	4
4. Essay tests make no allowance for student differences.	1	2	3	4
5. Resources do not provide for individual differences.	1	2	3	4
6. Lack of individualization in the student projects.	1	2	3	4
7. Rate of learning is not really individualized.	1	2	3	4
8. Student evaluation is not individualized.	1	2	3	4
9. Blaming the computer for failures to individualize in areas where the computer is not essential.	1	2	3	4

Not a Problem — Not Serious — Serious — Very Serious

10. Too much feeling of being a "guinea pig." 1 2 3 4

Others ______________________________

____

II. *Problems Related to Content of Instruction*

11. A lot of material presented in other classes seems irrelevant. 1 2 3 4
12. Lack of available information concerning exactly what a Clinical Teacher does. 1 2 3 4
13. No overall view of the interrelated area is provided. 1 2 3 4
14. Over-emphasis on names of individuals in the instruction. 1 2 3 4
15. Too much time spent with the first three modules. 1 2 3 4
16. The CTM modules are boring. 1 2 3 4

Others ______________________________

____

III. *Problems Related to Goals and Objectives*

17. No mechanism exists for identifying personal needs, goals, or objectives. 1 2 3 4
18. Lack of clarity and explicitness in module objectives. 1 2 3 4
19. Difficulty in identifying the important portions of articles. 1 2 3 4
20. Uncertainty of intended instructional outcomes in advance. 1 2 3 4
21. Uncertainty of expected learning outcomes even after an exam. 1 2 3 4
22. Lack of information concerning required classes. 1 2 3 4
23. Outcomes or objectives for regular classes are not specified. 1 2 3 4
24. Uncertainty of what is expected in the way of products for student projects. 1 2 3 4

Not Serious
Not a Problem
Serious
Very
Serious

25. Student interests and desires are not reflected in their projects. 1 2 3 4
26. Objectives provide no real guidance or direction. 1 2 3 4

Others ____________________
____

IV. *Problems Related to Instructional Resources*

27. Alternative or supplementary resources should be identified and made available. 1 2 3 4
28. Difficulty in finding resources in the library. 1 2 3 4
29. Lots of talk but still no resources in the Education Building or elsewhere. 1 2 3 4
30. Resources need to be available to take home. 1 2 3 4
31. Few alternatives for students who find it difficult to learn by reading. 1 2 3 4
32. The seminar room is not conducive to study of the resources. 1 2 3 4
33. Other resources and services on campus should be identified. 1 2 3 4
34. Lack of technical help for projects requiring special media. 1 2 3 4

Others ____________________
____

V. *Problems Related to Seminars*

35. Too many conflicts between the seminar and other classes. 1 2 3 4
36. Seminars lack direction. 1 2 3 4
37. Few learning needs are met by seminars. 1 2 3 4
38. Seminars are too group-oriented. 1 2 3 4
39. Too much repetition in seminar discussions. 1 2 3 4
40. Too much time spent talking about other university programs. 1 2 3 4

		Not a Problem	Not Serious	Serious	Very Serious
41.	Too much time spent "selling" the Clinical Teacher program.	1	2	3	4
42.	Too much time spent defending program philosophies.	1	2	3	4
43.	More time spent complimenting and reinforcing student questions than in providing answers.	1	2	3	4
44.	Lack of participation on the part of some students.	1	2	3	4

Others ____

____

VI. *Problems Related to Performance Assessment*

45.	Over-use of essay tests for student evaluation.	1	2	3	4
46.	Difficulty in knowing what to study for tests.	1	2	3	4
47.	Test questions don't seem to ask what is really wanted.	1	2	3	4
48.	Sample test items do not give a clear idea of what to expect on a test.	1	2	3	4
49.	Failure to utilize alternative testing methods.	1	2	3	4
50.	Items are more difficult for students who take tests last.	1	2	3	4
51.	Students who take tests last are expected to know more (grading standards are higher.)	1	2	3	4

Others ____

____

VII. Problems Related to Student-Faculty Relationships

52.	Not enough student-faculty interaction on a one-to-one basis.	1	2	3	4
53.	Not enough time for one-to-one communication with faculty.	1	2	3	4
54.	Too little feedback from faculty.	1	2	3	4
55.	Student-faculty interaction is superficial.	1	2	3	4

	Not a Problem	Not Serious	Serious	Very Serious
56. Student-faculty relationships are too formal.	1	2	3	4
57. It is difficult to interact with the faculty.	1	2	3	4
58. Little effort is really exerted in solving problems.	1	2	3	4
59. Instead of having *our* problems considered, we hear about how much better off we are than previous students.	1	2	3	4

Others ______________________________

____

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

PROBLEM SURVEY/SENIORS

Directions

Below are listed problems and situations which were mentioned on the previous survey instrument. The purpose of this questionnaire is to determine the intensity of these problems and to identify new problems which may have arisen.

Please *circle* the response which best indicates your opinion concerning the severity of each problem at the present time.

At the end of each category of problems there is a space for writing in other situations which have not been previously identified as problems.

After marking your responses, please choose the *ten* problems, which in your opinion, most inhibit the success of the Clinical Teacher Program. Circle the *numbers* of the ten items selected.

I. *Problems Related to the Instructional Process*

		Not a Problem	Not Serious	Serious	Very Serious
1.	Difficulty in adjusting to the individualized nature of the program.	1	2	3	4
2.	Transition from diagnosis to remediation is unsystematic.	1	2	3	4
3.	Program is not really individualized.	1	2	3	4
4.	Program does not match learner characteristics to learning tasks.	1	2	3	4
5.	Rate of learning is not individualized enough.	1	2	3	4
6.	Modes of learning are too random.	1	2	3	4
7.	The individualized learning structure is too unguided.	1	2	3	4
8.	Too much lag time between the "learning" and the "doing."	1	2	3	4

Others ______________________________

____

II. *Problems Related to Content of Instruction*

9.	Concept of writing a profile is too vague.	1	2	3	4
10.	Too much time is spent on norm-referenced testing.	1	2	3	4

		Not a Problem	Not Serious	Serious	Very Serious
11.	Not enough time is spent on criterion-referenced testing.	1	2	3	4
12.	Not enough instruction included on remediation procedures.	1	2	3	4
13.	Not enough instruction included on learner characteristics.	1	2	3	4
14.	Not enough instruction included on task characteristics.	1	2	3	4
15.	Lack of a systematic approach to individualizing instruction for pupils encountered in resource room.	1	2	3	4
16.	Not enough instruction on how to use a skills continuum.	1	2	3	4
17.	Not enough instruction on how to interpret test scores.	1	2	3	4
18.	Not enough on different approaches to teaching reading.	1	2	3	4
19.	Too much time spent giving intelligence tests.	1	2	3	4
20.	Too many formal tests included that seem unimportant.	1	2	3	4
21.	Not enough competency tests on subjects related to the CTT.	1	2	3	4
22.	Not enough instruction on the linkage of diagnosis to remediation with case illustrations.	1	2	3	4
23.	Lack of instruction on the procedures for determination of pupil entry level.	1	2	3	4
24.	Lack of instruction on the procedures of writing performance contracts.	1	2	3	4
25.	Not enough direction given in use of diagnostic instruments during the familiarization phase.	1	2	3	4
26.	Not enough assistance provided in scoring of tests administered by CTT.	1	2	3	4

Others ____

____

III. *Problems Related to Goals and Objectives*

	Not a Problem	Not Serious	Serious	Very Serious
27. Lack of direction as to where individuals are headed.	1	2	3	4
28. Additional diagnostic skills are needed.	1	2	3	4

Others ____________________

____

IV. *Problems Related to Instructional Resources*

29. Resources deficient in diagnostic equipment.	1	2	3	4
30. Not enough use of multi-media equipment.	1	2	3	4
31. Not enough resources on criterion-referenced tests.	1	2	3	4
32. Resources are not being utilized properly.	1	2	3	4
33. Not enough diagnostic experience provided with handicapped children.	1	2	3	4
34. Not enough children for the number of CTT students in the program.	1	2	3	4
35. Resources and materials on remediation are inadequate.	1	2	3	4

Others ____________________

____

V. *Problems Related to Seminars*

36. Seminars lack guidance.	1	2	3	4
37. Seminars lack specific focus.	1	2	3	4
38. Student input has not been utilized in structuring seminars.	1	2	3	4

Others ____________________

____

VI. *Problems Related to Student-Faculty Relationships*

39. Not enough guidance from CTT faculty.	1	2	3	4

	Not a Problem	Not Serious	Serious	Very Serious
40. Lack of specific communication between CTT professors and students.	1	2	3	4
41. Difficulty in working with the other students.	1	2	3	4
42. Professors hear only what they want to hear.	1	2	3	4
43. Lack of acceptance of suggestions and recommendations.	1	2	3	4

Others ____

____

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

BENEFIT ANALYSIS

Status: 1 2 3

As you know, the evaluation component of the CT project has been collecting information concerning the problems of program implementation. To complete the data pertaining to unanticipated outcomes, we would now like to determine what trainees in the project perceive as the advantages or benefits of the program. The format of the benefit analysis is similar to that of the problem survey. Please respond in a like manner.

Directions

Please list what you believe to be the immediate and long-range advantages of the CT program to you and to your future students. Try to *differentiate* between your true perceptions of the advantages and those "advertised" for the program.

A. Immediate and long-range *advantages* of the CT program *for you.*

B. Immediate and long-range *advantages* of the CT program *for your students.*

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

BENEFIT ANALYSIS

Directions

Your responses to the open-ended benefit analysis have been compiled below. These responses have been taken practically verbatim from the previous survey and therefore include some questions which are similar, although not exactly alike. Please use the following scale to rate all questions according to *your perception* of their being advantages or benefits of the program: 1. Not an advantage or benefit; 2. minor advantage or benefit; 3. major advantage or benefit; 4. outstanding advantage or benefit. There is space for writing in, at the end of each category, other advantages or benefits.

I. *Immediate and long-range advantages of the CT program for you*

A. Advantages or benefits related to personal aspirations:

	Not	Minor	Major	Outstanding
1. This field provides an opportunity to relate to handicapped children.	1	2	3	4
2. This field provides an opportunity to work with children who need help.	1	2	3	4
3. The program provides an opportunity to be part of changing the educational system.	1	2	3	4
4. The program culminates in a Master's degree.	1	2	3	4
5. The program provides financial assistance to participants.	1	2	3	4
6. There is an open employment field for graduates.	1	2	3	4
7. The salary range for graduates in this field is high.	1	2	3	4

Additional benefits or advantages ______________________________

____

B. Advantages or benefits related to your current role as a student:

		Not	Minor	Major	Outstanding
8.	The program is competency-based.	1	2	3	4
9.	The prog[illegible] provides an opportun[illegible] to learn by doing.	1	2	3	4
10.	The program emphasizes independent study.	1	2	3	4
11.	There is less pressure under the individualized instruction method.	1	2	3	4
12.	The program includes extensive field study.	1	2	3	4
13.	There is a minimum of pressure during evaluation of my work.	1	2	3	4
14.	The faculty members in the program are readily available.	1	2	3	4
15.	The faculty in the program exhibit considerable interest.	1	2	3	4
16.	The resources are readily available.	1	2	3	4
17.	The overall program format is beneficial.	1	2	3	4
18.	The program instruction is cohesive.	1	2	3	4
19.	The program interrelates other disciplines or courses.	1	2	3	4
20.	The student is involved with the latest information in the field.	1	2	3	4
21.	The program provides organization for relating the child and the instructional process.	1	2	3	4

Minor — Major
Not — Outstanding

22. The program provides organization in tutoring efforts. 1 2 3 4

Additional advantages or benefits ____________________

C. Advantages related to your expected role as a Clinical Teacher:

23. The objectives of the program fit my concept of an ideal teacher. 1 2 3 4
24. The program will lead to competency in the teaching process. 1 2 3 4
25. The program will aid in the development of a personal philosophy of education. 1 2 3 4
26. The program provides specialized training in observational systems. 1 2 3 4
27. The program provides knowledge of an effective process for teaching children with learning disabilities in a resource room. 1 2 3 4
28. The program provides knowledge of the other effective methods of teaching. 1 2 3 4
29. As a practicing Clinical Teacher, there will be freedom to choose appropriate teaching methods. 1 2 3 4
30. As a practicing Clinical Teacher, there will be considerable pupil contact. 1 2 3 4
31. The Clinical Teacher employs an individualized program for children. 1 2 3 4

Minor — Major
Not — Outstanding

32. The program will lead to effective management of the classroom. 1 2 3 4

Additional advantages or benefits ____________

II. Immediate and long-range advantages of the CT program *for your future students.*

D. Advantages or benefits for the students related to your competencies:

33. The Clinical Teacher will feel comfortable on the job. 1 2 3 4
34. The Clinical Teacher will have the necessary skills to teach reading and math. 1 2 3 4
35. The trainee fieldwork will produce a more competent beginning teacher. 1 2 3 4
36. The Clinical Teacher will have many competencies needed for instructional effectiveness. 1 2 3 4
37. The Clinical Teacher will be flexible. 1 2 3 4
38. The Clinical Teacher will listen to feedback. 1 2 3 4

Additional advantages or benefits ____________

E. Advantages or benefits related to the teaching method:

39. The teaching method will provide more individual attention for the child. 1 2 3 4
40. The teaching method will provide greater pupil contacts. 1 2 3 4
41. The teaching method will provide individualized instruction to meet student needs. 1 2 3 4

		Not	Minor	Major	Outstanding
42.	The pupil will be given positive reinforcement.	1	2	3	4
43.	The teaching method emphasizes use of a variety of available media.	1	2	3	4
44.	The teaching method emphasizes proper placement on a skill continuum for diagnosis and intervention.	1	2	3	4
45.	The teaching method makes pinpoint observation and remediation of behavior possible.	1	2	3	4
46.	The teaching method provides the ability to produce gains in students having different abilities and disabilities.	1	2	3	4
47.	The pupil will be taught as the trainee was taught.	1	2	3	4

Additional advantages or benefits________________________________

____

F. Advantages or benefits related to teaching philosophy:

48.	This teaching approach reduces the stereotype of the handicapped.	1	2	3	4
49.	This teaching approach places the student back into "the mainstream" of education.	1	2	3	4
50.	The child remains in the regular classroom during most of the school day.	1	2	3	4
51.	The child is not labeled, but taught.	1	2	3	4
52.	Failure is placed on the teacher and method, not on the child.	1	2	3	4

	Not	Minor	Major	Outstanding
53. With this approach, common learning objectives are emphasized rather than student exceptionalities.	1	2	3	4
54. The child will be treated for the "real" problems that exist and can be recorded.	1	2	3	4
55. The child will be happier and more motivated.	1	2	3	4
56. The child's needs will be met more readily.	1	2	3	4
57. The child will have fairer overall treatment.	1	2	3	4

Additional advantages or benefits ____________________

____

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CLINICAL TEACHER MODEL

RESOURCE EVALUATION

Resource ____________________ Module Number ________

Please circle the *one* response which is most indicative of your feelings about each of the statements below, where:

SA - Strongly agree
A - Agree
N - Neither agree nor disagree
D - Disagree
SD - Strongly disagree

1. The resource was readily *available*. SA A N D SD
2. The resource was directly *related to the objectives* stated in the module. SA A N D SD
3. Most of the information was *new* to me. SA A N D SD
4. The content was *interesting*. SA A N D SD
5. The content seemed *timely and important*. SA A N D SD
6. I had no difficulty *understanding* the material. SA A N D SD
7. The resource provided adequate *coverage* of the topic presented. SA A N D SD
8. The resource was *sharp in focus*, i.e., extraneous material was minimal. SA A N D SD
9. The amount *learned* was *commensurate with* the *time* required. SA A N D SD
10. The resource should be *retained* in the module as is. SA A N D SD
11. The resource should be *retained, but revised*. SA A N D SD

ADDITIONAL COMMENTS:

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

MODULE EVALUATION

Module Number ________________

Please circle the *one* response which is most indicative of your feelings about each of the statements below, where:

SA - Strongly agree
A - Agree
N - Neither agree nor disagree
D - Disagree
SD - Strongly disagree

1. Mastery of the objectives was assessed in the exact mannner that I expected. SA A N D SD
2. I memorized information that did not seem very important to me. SA A N D SD
3. The objectives clearly specified all the intended outcomes of the module. SA A N D SD
4. Additional resources were needed to make the instruction complete. SA A N D SD
5. In view of the effort put into the module, I was satisfied with what I learned. SA A N D SD
6. The test contained questions that I did not anticipate. SA A N D SD
7. I feel that the training should be more structured. SA A N D SD
8. The cognitive tasks and the contracted products and activities were closely related. SA A N D SD
9. More copies of the resources should be provided. SA A N D SD
10. The importance of this module is probably more apparent to the designers of the program than it is to me. SA A N D SD
11. The instruction was highly personalized. SA A N D SD
12. It was necessary to memorize material which I did not fully understand. SA A N D SD
13. From the wording of some of the test items, I was uncertain of what was being asked. SA A N D SD
14. A faculty member was readily available for consultation whenever I needed him. SA A N D SD

15. The relationship of the module to the overall goals of the program is clear to me. SA A N D SD
16. I already knew much of the information presented in the instructional resources. SA A N D SD
17. Other methods should have been used for evaluating mastery of the stated objectives. SA A N D SD
18. I am convinced that this module is essential in the preparation of a Clinical Teacher. SA A N D SD
19. My responses to the test items did not provide an accurate representation of what I learned. SA A N D SD
20. I worked at my own pace in the module. SA A N D SD
21. I had little difficulty identifying the important portions of the assigned readings. SA A N D SD
22. Most of the information in each reference was directly related to the module objectives. SA A N D SD
23. It was difficult to determine exactly what was expected of me without additional information obtained in the seminars or in personal communication. SA A N D SD
24. The objectives could be mastered more efficiently by some other means. SA A N D SD
25. The test covered some material that was not included in the module. SA A N D SD
26. The module should provide a more comprehensive explanation of what the learner is expected to do. SA A N D SD
27. I knew exactly what standards would be used in judging the quality of my negotiated product (or performance). SA A N D SD

ADDITIONAL COMMENTS:

APPENDIX E

DOCUMENTATION AND USER'S GUIDE TO THE COMPUTER MANAGEMENT SYSTEM FOR THE CLINICAL TEACHER CURRICULUM

PART I
USING THE SYSTEM

Terminal Log-In

To log in under C.R.T., i.e., to turn the C.R.T. (cathode-ray tube) on and get it ready for use, the user must perform the following steps:

1. Turn the power on by pressing the button <u>On</u> at the far upper right. After a few seconds the system will reply:

```
yy/mm/dd/hh.mm.ss.
KRONOS TIME-SHARING SYSTEM — VER 2.00
USER NUMBER:
```

(Where yy/mm/dd is YEAR/MONTH/DAY, and hh.mm.ss. is HOURS.MINUTES.SECONDS)

2. At this time, enter your seven (7) character user number after the colon. (You can get this, as well as your password, from Dr. Oseroff, if you haven't already.)

After this is done, depress the carriage <u>Return</u> key, hereafter denoted as the (CR) key, or as (CR). *Every line that you type, regardless of content, must be followed by depressing the* (CR) *key* in order for the command or instruction to be sent to the computer.

The system will then respond by typing:

```
PASSWORD
$$$$$$$
```

3. Here you enter your password, consisting of seven (7) numeric characters. (These are the last seven numeric characters of your Social Security number.) Type the password in the over print area that the system has provided in order to provide a measure of security. Remember to follow this by a CR key. If the user number or password is not acceptable, the system types:

```
IMPROPER LOG IN, TRY AGAIN
User Number:
```

You can try again if you like, or turn the terminal off by depressing the power button again.

If the user number and password are acceptable, the system responds:

```
Terminal nn
System:
```

(here nn is the terminal number)

Here are a few notes about the C.R.T. and the interactive system that may be of some use to you.

1. If you make a typing error and wish to backspace to correct it, depress the button which has ═ on it (Two bars, one above the other. Do not confuse it with the equal sign) This will print a bar (–). For each character you backspace you will remove one (1) character from the C.R.T. input buffer (including blanks).

2. If you make an error and wish to delete the entire line that you are typing, simply depress the ESC key in the upper, left-hand corner of the keyboard. This will cause *DEL* to be printed at the end of the line; the carriage will return automatically, and the line will be removed automatically, and the line will be removed from the C.R.T. input buffer.

3. All commands that you type must be followed by a CR (Return key) in order for them to be sent to the computer.

4. The password cannot be seen; it is shown in the manner below solely for purposes of illustration.

```
PASSSWORD
|3|0|6|0|8|8|4|
Terminal 16
System:
```

All you have had to do thus far is the following:

1. Turn the power on.
2. Type your user number.
3. Type your password.

Terminal Log-off

When processing is complete, you can terminate communication with the computer by typing:

```
BYE (CR)
```

This instruction logs you off the system, purges all local files, and prints the following information:

```
xxxxxxx  Log Off  hh.mm.ss
xxxxxxx  CP       S.SSS SEC.
```

(Where xxxxxxx is the user number and s.sss is the total central processor time used.)

Before leaving, depress the power button to turn the power off.

All you have had to do thus far is the following:

1. Type BYE
2. Depress the power button to turn the power off

The Update Processor

1. In response to the request for system, we will select the batch subsystem by typing:

```
BATCH, 30000 (CR)
```

BATCH stands for the subsystem we are using and 30000 stands for field length.

The system will respond by typing a slash (/), showing that it is ready for the next command.

2. In order to use the update, type:

```
GET, UPDATE / UN = 5616002 (CR)
```

This, more or less, attaches the file update locally to your C.R.T. UN stands for user number. The system should respond with a slash (/). However, if for some reason the system responds with the message, "Update not found," the message indicates that either the file currently is not in the system or that you do not have permission to use it, so you should log off.

3. To actually "bring up" the update, type:

```
CALL, UPDATE (CR)
```

Now you are in the C.T.M. update processor and you will read the following message on the screen:

```
CLINICAL TEACHER MODEL   UPDATE   VER . 1.0
Please enter your Social Security Number without spaces or
dashes.
```

Enter here your Social Security Number. Remember, the system will start the line with a question mark, indicating it is ready. After you finish typing your Social Security Number, you will see the following message on the screen:

```
HELLO, YOU HAVE ENTERED THE UPDATE PROCESSOR
FOR THE CLINICAL TEACHER MODEL MANAGEMENT
SYSTEM.
********************************************************
EACH TRANSACTION YOU ENTER WILL BE CHECKED BY
THE SYSTEM, AND YOU WILL BE IMMEDIATELY ADVISED
OF ITS ACCEPTANCE OR REJECTION. HOWEVER, NONE OF
THE ACCEPTED TRANSACTIONS WILL BE RECORDED
UNTIL YOU TYPE 'FINIS' AND THE SYSTEM ACKNOWL-
EDGES. IF YOU WISH NOT TO HAVE YOUR TRANSACTIONS
RECORDED, TYPE "REJECT." ALWAYS WAIT UNTIL A
QUESTION MARK APPEARS BEFORE ENTERING A NEW
TRANSACTION LINE
********************************************************
```

In this section we have covered the following:

1. BATCH, 30000 (CR) . Assigns Subsystem & Memory.
2. GET, UPDATE /UN = 5616002 (CR) . Attaches Procedure File.
3. CALL, UPDATE (CR) . Executes Procedure File.
4. Your Social Security No. (CR) . (263060884) Permission.

Logs and Identifiers

Now the system is ready to accept the transactions corresponding to the information received on the color-coded transaction logs. There are three color-coded sheets.

1. Orange	●	Entry log
2. White	●	Transaction Log
3. Pink	●	Completion Log

A transaction is composed of pieces of information taken directly from the transaction logs. On these logs, we have identifiers.

Identifiers

The identifier is one of ten names which identify the type of information being entered. An identifier must be followed by an equal sign (=); then you enter the required information, followed immediately by a comma (no blanks are allowed). The end of a transaction is indicated by a semicolon instead of a comma.

A transaction may be entered on more than one line. Each line must end with a completed piece of information; if not, you'll get an error message. A maximum of twelve lines will be allowed per transaction. The order in which information is entered within a transaction is unimportant except in two instances:

1. The C_2 entry must always come first.
2. PROD entries must always precede the OBPRO entry and both must be as a pair, one after the other.

The ten identifiers that the system uses are:

1. C_2 : This identifies for spellout student-module identification number. It is a combination of module number and social security number. This must be the first entry of any transaction. It is 12 characters long. The first 3 digits are the Module Number and the last 9 digits are the Social Security Number.

   Example: C_2 = 031264650894 031 is the Module Number, and 26465 0894 is the Social Security Number.
2. DE: This identifier is for Date of Module Entry. It is 5 characters long. The first two consist of a two-digit numeric entry for the month. The third character is a slash (/), and the last two characters consist of a two-digit numeric entry for the

day. Leading zeroes must be included in both month and day entries.

Example: DE=03/07,
03 is for the third month, and 07 for the day.

3. RU: This identifier is for resources utilized. It is up to nine characters long. It must be an official name or error will result. Multiple RU entries will be accepted within one transaction; each is entered as a separate piece of information.

Example: RU = SEMINARS (for one)
RU = SEMINARS, RU = FIELDWORK, - - -, RU = SMITH, (for more than one).

4. TIME: This identifier is for time spent on module since last update. It is up to 4 characters; all are numeric. Time is entered in tenths of an hour, with no decimal point.

Example: TIME = 23. (This is for 2.3 hours.)

5. STYLE: This identifier is for pupil styles. It is up to 15 characters. Three style entries will be accepted per student module. They must be official entries or an error will result. Multiple style entries may be made in the same transaction. Each style entry to be made as a separate piece of information.

Example: STYLE = Independent.

6. IIS: This identifier is for individualized instructional strategy. It is up to twenty-six characters. It must be an official term or an error will result.

Example: IIS = Self Directed.

7. PROD: This identifier is for product. It is up to 15 characters. It must be an official term or an error will result.

Example: PROD = Paper.

8. OBPRO: This identifier is for product proficiency. It is up to 3 digits character type, numeric only. The OBPRO entry is related to the PROD entry, so it must be entered immediately after the PROD entry.

Example: MOD PRO = 90.

9. MODPRO: This identifier is for module proficiency. It is up to 3 digits character type, numeric only.

   Example: MODPRO = 95.

10. DC: This identifier is for date of module completion. It is the same as DE.

    Example: DE = 06/26.

In this section we have covered the following:

A The entry logs:
  1. Orange for entry
  2. White for transaction
  3. Pink for completion.

B The identifiers:
  1. C_2 : This is for MOD — Social Security Number. It is 12 digits.
  2. DE: This is for Date of Entry. It is 5 characters.
  3. RU: This is for Resources Utilized. It is up to 9 characters.
  4. TIME: This is for Time Spent. It is up to 4 digits.
  5. STYLE: This is for Pupil Style. It is up to 15 characters.
  6. IIS: This is for Individualized Instructional Strategy. It is up to 26 characters.
  7. PROD: This is for Product. It is up to 15 characters.
  8. OBPRO: This is for Product Proficiency. It is up to 3 digits.
  9. MODPRO: This is for Module Proficiency. It is up to 3 digits.
  10. DC: This is for Date of Completion. It is 5 characters.

Before we go further, keep in mind the following remarks:

1. It is suggested that the order of the information on the transaction logs be used on the terminal when you type them.
2. Every transaction must contain a time entry. However, if there is no time, it must be entered as zero. Example: TIME = 0.0
3. To enter a student into a module, the transaction must contain DE, STYLE, and IIS entries. If it does not, it will be rejected.
4. To complete a student module, a MODPRO and a DC entry is required.
5. Transactions are checked at the time they are entered at the terminal and at the time they are entered into the information base.
6. Duplicate RU entries are ignored.

7. If the type of transaction conflicts with the status of the student record, the entire transaction is ignored, and an error message is written to this effect on the new report which is generated. That is, you are not allowed to transact in any way with a closed module, and you are not allowed to enter a module more than one time.

Report and Summary

When you finish typing the information from the logs on the C.R.T., type FINIS, and the system will answer by telling you how many transactions are in process; then you log off. A new report will be available on file in an hour or so.

1 To get a hard copy of this report, go to the central site and submit at the Input-Output room, the "REP_3" Deck (Ask Dr. Oseroff), and in an hour or so, depending on how busy the central site is, you will get a hard copy of the latest report.

2 To get a summary of this report, submit "SUM" Deck

(Ask Dr. Oseroff) instead of "REP_3" Deck, and you will get a hard copy of the latest summary report.

3 If you want both a hard copy of the report and a hard copy of the summary, submit one of the decks first and wait until you get the hard copy; then submit the other deck. The order of submitting the decks is immaterial, but do not submit both simultaneously.

Correction Procedures

Any information entered by the terminal into the C.T.M. management system may be corrected by a special type of transaction which can be entered on the terminal along with any normal transaction desired.

CORRECT — Identifier: This identifier is used to identify the transaction as a correction. It is always entered as the first piece of information. When it is used *no* C_2 entry is made for the transaction.

CORRECT: This is for student-module identification number. It is a combination of Module Number and Social Security Number; it is 12 characters long. The first 3 digits are Module Number, and the last 9 digits are the Social Security Number.

Example: CORRECT = 031264650894.

Once the transaction has been designated as a correction by the use of the correct identifier, any piece of information may be corrected in the student record — simply enter the correct piece of information and the corrected value will be substituted for the old one.

> Example: Suppose we want to correct the time. The old value is 23; and the correct one is 42. To do that, type the following:

```
CORRECT = 031264650894, TIME = 42; CR
```

When you do this, the old entry list is blanked out and the entries which you typed as your correction transaction are recorded. Therefore, to remove one incorrect RU entry from a list containing RU entries, the 2 correct RU entries should be entered in the correction transaction.

> Example: Suppose we have, RU = Fieldwork, RU = Seminars, RU = Smith, but RU = Smith should be RU = Schwartz; then type the following: RU = Fieldwork, RU = Seminars, RU = Schwartz. The PROD - OBPRO pairing must be observed in the correction transaction as it is in a normal one. To correct the DE, you do not have to include STYLE and IIS corrections; only the DE entry is necessary. To remove an entire student module from the report, make a correct entry for the particular module entering the Date entered as DE = 00/00; the whole instruction will look like this:

> CORRECT = 031264650894, DE = 00/00; If you wish to blank out the MOD PRO and DC information on the student record, this may be accomplished first by removing his entire record with a CORRECT transaction and entering the desired information with a normal module entry transaction.

Example:

```
CORRECT = 031264650894, DE = 00/00;
C2 = 031264650894, - - - -;
```

When you have entered all the transactions you desire, you have a choice of having the system submit the accepted transactions or you may choose to have the system ignore them. To have your transactions recorded, type FINIS. To have your transactions rejected, type REJECT. Wait until the system replies with a slash (/) mark, then log off.

NOTE: The C.T.M. management system has two categories of users — students and teachers — if you are not classed as one of these you are not allowed to use the C.T.M. system. Your user category is established by the Social Security Number you enter.

1. Student category: Students are only allowed to make C_2, RU, and TIME entries. They are not allowed to make correction transactions.
2. Instructor category: Instructors have unlimited use of the system.

Purpose of the Scan

The SCAN enables the user to access the file containing the complete listing of the Clinical Teacher Model individual reports and selectively display this information, module by module, on a remote terminal facility.

Using the SCAN system at a remote terminal requires three steps which must be executed in the order specified:

1. General Log-in, Log-off procedure; see Terminal Log-In, Log-Off, pages 202–204.
2. SCAN access procedure
3. Issuance of SCAN commands

After you Log-In, and when the computer responds by system, type:

```
BATCH, 30000 (CR)
```

BATCH stands for the system we are using and 30000 is for the field length.

Now, to access SCAN, type: `GET,SCAN/UN = 5616002 (CR)`. This will attach the file SCAN locally to your C.R.T. The system should respond with a slash (/). However, if for some reason the system responds with the message, "SCAN not found," the message indicates that either the file is currently not in the system or that you do not have permission to use it, so you should log off. To actually bring up the SCAN, type:

```
CALL, SCAN (CR)
```

Now you have completed SCAN access.

THE SCAN COMMANDS:

Student Access Command. To access a specific student's record, type:

S, Social Security Number of the Student CR

Example: S,261615551 CR

All nine digits of the student's Social Security Number must be entered. All SCAN commands must begin at the extreme left of the terminal and no imbedded blanks are allowed. After you type S, S.S. No. CR, The SCAN system will reply with the student's name, plus other information. After that, you may enter module display commands. We have three (3) module display commands.

1. The M, Module No. CR Command.

   Example: M, 031 CR.

This command allows you to display individual modules from the student's record simply by typing M, and the three-digit number of the module desired. The modules may be requested in any order.

> Example: If the particular student record accessed contains Module 001, 002, 003, and you want to display that, type M, CR, and the system will display Module 001. Type again M CR and the system will display Module 002, and so on. When the system displays all the modules, it will request a new student number.

Note: If the M, Module Number command was issued prior to the M command, the M command will display the module immediately following the one displayed by the M, Module Number command.

2. The M CR command. This command allows you to display the student's record, module by module by the numeric order.
3. The S CR command. This Command lists the entire record of the accessed student without pausing. The student record will be listed in numeric order by Module Number. This command may be issued regardless of previous display commands. If a second entire record display is desired, just re-enter this command at the termination of the first display. Any number of copies may be generated in this way. Once you have displayed the desired modules of a particular student, enter the "S, Social Security Number" command for the next student. Once you have accessed all students desired, enter STOP. This command removes you from the Scan System. If, for some reason you wish to terminate the results of a particular display command before the system has completed its display, hit "S"

and wait for the system to terminate. If you wish to do further scanning, you must execute *The Scan Access Procedure* to re-enter the Scan System.

In this section procedures for SCAN have presented and are summarized as follows:

1. BATCH, 30000 CR (in response to the System)
2. GET, SCAN/UN = 561600 CR
3. CALL, SCAN CR
4. S, S S — No CR

Up to here you accessed the student's record.

5. M, Module No CR If you want to display a specific module.
6. M CR if you want to display module by module in numeric order.

ADDITION TO THE SYSTEM

A. *Adding new modules to the C.T.M. System*

The addition of modules will always cause new Module Numbers and will normally cause the addition of new Resources. Infreqently, new arrangements of modules under major competencies will be made.

First. New modules are added to the data base, using the MODADD Job Deck.

Second. New module numbers and resources are added to the edit verification lists in program Input.

ICMOD is the array containing the module number list (KCO-110).

ICRU is the array containing the resource list (KCO-530).

Also, the variables IMOD 7 IRU will have to reflect the new ICMOD & ICRU counts.

If new arrangements of modules within competencies are desired, changes must be made to both the Edit and Report programs.

B. *Adding new students to the C.T.M. System.*

First. New student records are added to the data base using the MODADD Job Deck.

Second. New student Social Security Numbers are added to the Input program array name ICSS (KCO 140) and the new ICSS count is put in ISS (KCO 80). Also, if access to the input system is desired for these students, their Social Security Numbers must be added to the IUN array and their status (student = 1, instructor = 2) added to the IUP array. (Status Numbers are linked to Social Security Numbers by relative positions in their respective list. Also, the IUN count — LIUN — should be changed to reflect the new IUN count.

The three-letter prefix before the module number. (CTM, DIA & INT) is used as follows:
CTM is used for Modules 1 -3
DIA is used for Modules 4 - 32
INT is used for Modules 33 up.

The sequence of statements is the same in both programs.
In Report, they begin at REP 530; In EDIT, they begin at UIE 290.

C. *Adding other terms to the INPUT Program*

STYLES — ICST Array (DCO 250)
IST (Count of ICST KCO 80)

Individual Instructional Strategies:

ICII Array (KCO 300)
III (ICII Count) (KCO 80)

Products:

ICPR Array (KCO 350)
IPR (ICPR Count) (KCO 80)

D. *Input Job Flow*

Controlled by the INPUT Procedure File.

1. Attaches the *program* file which contains all system programs and control files.

2. Executes program INPUT. Input accepts transactions and puts a listing of these just as they are typed on file transactions. It reformats these transactions for later processing and puts them on file REFOR. If there are no acceptable transactions, or all the transactions have been rejected, it sets R1 = 2; otherwise R1 = 1.

3. R1 is checked for Value 2. If true, flow stops; if false, flow continues.

4. File CLINUP is created.
   CLINUP (file 1) is trans.
   CLINUP (file 2) is refor.

5. Submits Job UPDAT
   This is a C.T.M. system file which is added to the regular batch job.

Job flow stops until job UPDAT is accepted for processing. UPDAT consists of 5 records.

Record 1 is regular job control cards
Record 2 is a sort — merge control record
Record 3 is a MARS control record
Record 4 is a MARS control record
Record 5 is a sort — merge record

E. *UPDAT Job Flow*

1. Attaches file CLINUP & PROGRAM and removes need program from PROGRAM.

2. Attaches file LONGIO. This is used to allow large record I-O for RUN 23 Fortran programs.

3. Separates CLINUP. into TRANS & REFRO.

4. Sorts REFRO by first 30 characters in ascending order (MODSS NO. & TRANSACTIOTYPE) using UPDAT record 2. UPREC is new file name.

5. Executes program call M. This program checks the file UPREC and writes a message to file IRAMA asking MARS for each student-module record history that is needed. If a student-module is to be altered, a transaction altering it is present on UPREC. Call M creates a record, requesting this student-module from the MARS system.

6. The data base tape (FSU 1687 in 115) is requested and the appropriate files are stripped from it.

7. MARS is called and executed, using UPDAT record 3. This processes the history retrievals that exist on TRAMA and writes these history records on file OLDREC.

8. PROGRAM DIGEST & LONGIO are loaded and executed. DIGEST compares the transactions on REFRO with the

history on OLDREC and writes out a new modified record on NEWREC.

9. MARS is called and executed, using UPDAT record 4. MARS takes the modified records NEWREC and replaces their corresponding OLDREC's with them. It then retrieves a list of all student-module records and writes it on File XRPT.
10. Executes sort merge, using UPDAT record 5. This sorts XRPT by student name and Module/No. RPT is now new file name.
11. Loads Program Report REPORT and LONGTO & EXECUTES REPORT writes a date on file DATE.
12. RPT & DATE are combined with file ERROR and put on File X. ERROR is an error listing written by program digest.
13. A new Data Base Tape is written.
14. A new report is put on Disk File.

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

MODULE COMPLETION LOG

NAME ______________________ CURRENT DATE __________

(1). Student-Module Identification No. (C2):

____

Module No. (3 Digits) Social Security No.

(2). Resources Utilized (Please spell correctly) (RU):

(1) ____________________ (2) ____________________

(3) ____________________ (4) ____________________

(5) ____________________ (6) ____________________

(3). Time Spent (to the nearest 1/10 hour) (TIME):

____

....

THIS SECTION FOR INSTRUCTOR USE ONLY

Product (PROD)	Product Proficiency (OBPRO)
(1) ____________________	____________________
(2) ____________________	____________________
(3) ____________________	____________________

Module Proficiency (MODPRO): ____________________

Date of Module Completion (DC): ____________________
Month (2 Digits) Day (2 Digits)

3 — Compl

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

MODULE ENTRY LOG

NAME ____________________ CURRENT DATE __________

1. Student-Module Identification No. (C2):

____

Module No. (3 Digits) Social Security No.

2. Date of Module Entry (DE): ____________________

Month (2 Digits) Day (2 Digits)

3. Resources Utilized (Please spell correctly) (RU):

(1) ________________ (2) ________________

(3) ________________ (4) ________________

(5) ________________ (6) ________________

4. Time Spent (to the nearest 1/10 hour) (TIME):

____

……

THIS SECTION FOR INSTRUCTOR USE ONLY

Pupil Styles (STYLE):
(1) ____________ (2) ____________ (3) ____________

Individualized Instructional Strategy (IIS):

____

1 — Entry

THE FLORIDA STATE UNIVERSITY

CLINICAL TEACHER MODEL

MODULE TRANSACTION LOG

NAME ______________________ CURRENT DATE __________

1. Student-Module Identification No. (C2):

____

Module No. (3 Digits) Social Security No.

2. Resources Utilized (Please spell Correctly) (RU):

(1) ______________________ (2) ______________________

(3) ______________________ (4) ______________________

(5) ______________________ (6) ______________________

3. Time Spent (to the nearest 1/10 hour) (TIME):

____

……………………………………………………………………

THIS SECTION FOR INSTRUCTOR USE ONLY

	Product (PROD)	Product Proficiency (OBPRO)
(1)		
(2)		
(3)		

2 — Trans

SAMPLE LOG IN-LOG OUT

```
  73/07/20. 08.34.42.
FSU   KRONOS TIME SHARING SYSTEM VERSION 2.01.
USER NUMBER:  5616002
PASSWORD
×××××××××
TERMINAL:     60
SYSTEM: BATCH, 30000
SRFL, 30000.
/GET, UPDATE/UN=5616002
/CALL,UPDATE
  CLINICAL TEACHER MODEL      UPDATE VER. 1.0
  PLEASE ENTER YOUR SOCIAL SECURITY NUMBER
  WITHOUT SPACES OR DASHES
?263060884
  HELLO, YOU HAVE ENTERED THE UPDATE PROCESSOR
  FOR THE CLINICAL TEACHER MODEL MANAGEMENT
  SYSTEM.
●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
  EACH TRANSACTION YOU ENTER WILL BE CHECKED BY
  THE SYSTEM, AND YOU WILL BE IMMEDIATELY
  ADVISED OF ITS ACCEPTANCE OR REJECTION.
  HOWEVER, NONE OF THE ACCEPTED TRANSACTIONS
  WILL BE RECORDED UNTIL YOU TYPE 'FINIS' AND THE
  SYSTEM ACKNOWLEDGES. IF YOU WISH NOT TO HAVE
  YOUR TRANSACTIONS RECORDED, TYPE 'REJECT'.
  ALWAYS WAIT UNTIL A QUESTION MARK APPEARS
  BEFORE ENTERING A NEW TRANSACTION LINE
●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
?023263805101
                    +++ ERROR +++
  THIS TRANSACTION HAS BEEN REJECTED
  YOU HAVE ENTERED AN ILLEGAL NAME AS THE FIRST
  ENTRY
  IT MUST BE EITHER 'C2' FOR A LEGAL TRANSACTION
  OR 'FINIS' OR 'REJECT' TO TERMINATE.
  PLEASE RE-ENTER THIS ENTIRE TRANSACTION
?C2=023263805101,DE=04/30,RU=FIELDWORK,
RU=SEMINARS, RU=WISC KIT,
?TIME=0.0,STYLE=VISUAL,STYLE=INDEPENDENT,
IIS=SELF DIRECTED;
                    +++ERROR+++
  THIS TRANSACTION HAS BEEN REJECTED
  YOU HAVE ENTERED TIME =0.0
  THIS IS AN ILLEGAL VALUE. PLEASE CHECK LISTING OF
  PERMISSABLE VALUES
  PLEASE RE-ENTER THIS ENTIRE TRANSACTION
?C2=023263805101,DE=04/30,RU=FIELDWORK,
RU=SEMINARS, RU=WISC KIT,
                      +++ ERROR +++
  THIS TRANSACTION HAS BEEN REJECTED
  YOU HAVE ENTERED RU =WISCKIT
  THIS IS AN ILLEGAL VALUE. PLEASE CHECK LISTING OF
  PERMISSABLE VALUES
  PLEASE RE-ENTER THIS ENTIRE TRANSACTION
?C2=023263805101,DE=04/30, RU=WISC
KIT, RU=FIELDWORK, RU=SEMINARS,
?TIME=0, STYLE=VISUAL, STYLE=INDEPENDENT,
IIS=SELF DIRECTED;
  THIS TRANSACTION HAS BEEN ACCEPTED BY THE CT
  MANAGEMENT SYSTEM
  PLEASE ENTER YOUR NEXT TRANSACTION
?C2=023266968237, RU=FERINDEN, TIME=25;
THIS TRANSACTION HAS BEEN ACCEPTED BY THE CT
  MANAGEMENT SYSTEM
  PLEASE ENTER YOUR NEXT TRANSACTION
?C2=023266968237, RU=FERINDEN, TIME=25;
 THIS TRANSACTION HAS BEEN ACCEPTED BY THE CT
MANAGEMENT SYSTEM
  PLEASE ENTER YOUR NEXT TRANSACTION
?C2=022264847239,RU=COHEN,RU=SMITH,TIME=150,
PROD=TEST, OBPRO=95,
                      +++ ERROR +++
  THIS TRANSACTION HAS BEEN REJECTED
  YOU HAVE ENTERED RU =COHEN
  THIS IS AN ILLEGAL VALUE. PLEASE CHECK LISTING OF
  PERMISSABLE VALUES
  PLEASE RE-ENTER THIS ENTIRE TRANSACTION
?C2=022264847239,RU=SMITH,TIME=150,PROD=TEST,
OBPRO=95,MODPRO=95,
?DE=05/31;
                      +++ ERROR +++
  THIS TRANSACTION HAS BEEN REJECTED
  YOU HAVE NOT INCLUDED A DE, STYLE, AND IIS ENTRY
  ALL THREE ARE REQUIRED FOR A MODULE ENTRY
  PLEASE RE-ENTER THIS ENTIRE TRANSACTION
?REJECT
  YOU HAVE REJECTED ALL THE PREVIOUSLY ACCEPTED
  TRANSACTIONS.
  WAIT TILL THE SYSTEM REPLIES WITH A'/'THEN TYPE
  'BYE' TO LOG OFF
1, EXIT.
/BYE
5616002  LOG OFF.           08.52.42.
5616002  CP                0.847 SEC.
MOD,CM77777,T300. 5616 CIA
ACCOUNT(5616002,3060884)
WRITEF(MTABLE)
REWIND,MTABLE.
GET,PROGRAM.
GET(LONGIO/UN=LIBRARY)
SKIPF(PROGRAM,6)
COPYBF(PROGRAM,RMAKE)
LOAD,RMAKE.
LOAD,LONGIO,RUNLIB.
EXECUTE.
MARS.
REWIND(MODT,MTABLE)
REQUEST,TAPE,HY. FSU 1687 IN 115     RING IN PLEASE
SKIPF(TAPE,12)
COPYBF(TAPE,PUNCH)
REWIND,TAPE.
COPYBF(MTABLE,TAPE,3)
COPYBF(MODT,TAPE)
WRITEF(TAPE,9)
7
BREZIN, MICHAEL J.                         233843766
CHAMBERS, WILLIAM N.                       267197696
CHOPPIN, SUZANNE M.                        261111472
COHEN, ADRIENNE J.                         261967498
COLONNA, KARLA A.                          264989903
GRIFFIN, SUSAN DIANE                       264847239
MALTBY, JUDY L.                            265962945
MATHEWS, STELLA M.                         263805101
MURPHY, THERESA C.                         423609205
OLSON, DEBRA JEAN                          263025755
PHILLIPS, AMY S.                           417645525
STONE, JUDY A.                             265025598
STYGAR, THOMAS STANLEY                     261882915
WARD, NANCY C.                             263984950
WILLIAMS, CHERYL L.                        266968237
ADAMS, DIANNE                              262846084
ADKINS, LEA                                266929996
BRZOSKA, KEN                               040484514
```

LIPNER, LAURA	264968957
MAXSON, BONNIE	433865222
MOSTER, RANDY	108428797
PATRICK, FRANCES	262849843
THIEBAUD, CYNTHIA J.	266889329
TURNER, KAREN	261884025
VLOEDMAN, KATHY	266942684
WILLIAMS, GLORIA	175405002

7

001CLINICAL TEACHER CONCEPT HERITAGE 1700-1900
80 40
SYNTHESIS OF KNOWLEDGE COMPONENTS OF MEDICAL MODEL 2
COLE ITARD KANNER TALBOT VIDEO SEMINARS GROUP COM

002CLINICAL TEACHER CONCEPT CONTEMPORARY 1900-1968 80 80
SYNTHESIS OF KNOWLEDGE COMPONENTS OF PSYCHOLOGICAL MODEL 2
BATEMAN BINET BRUEKNER FERNALD JENKINS KIRK SMITH WITMER SEMINARS GROUP COM

003CLINICAL TEACHER CONCEPT CULTURE-GENERIC APPROACH 80 80
SYNTHESIS OF KNOWLEDGE COMPONENTS OF INSTRUCTIONAL SYSTEM 2
ADAMSON BLACKMAN DENO HARING LESSINGERMACER SCHWARTZ SCHWARTZ SCHWARTZ SEMINARS GROUP COM

020DIAGNOSIS PUPIL OBJECTIVES 80 1
ACQUISITION OF THE CLINICAL TEACHER BEHAVIORAL SEQUENCES 1
AWARENESS OF ADDITIONAL SOURCES OF BEHAVIORAL OBJECTIVES 1
CT BEH CBBIBLIOG SEMINARS

021DIAGNOSIS SYSTEMATIC OBSERVATION 80 60
SYNTHESIS OF THE ELEMENTS OF THE 3 OBSERVATIONAL SYSTEMS—LINDSLEY, MADSEN, PREC TEACHING 2
SYSTEMATICALLY PINPOINT AND OBSERVE BEHAVIORS AND RECORD DATA RELIABLY USING EACH SYS. 3
DRUCKER KERLINGERPETER VAN DALENVIDEC MULTIMED SEMINARS PSY 317

022DIAGNOSIS TESTING FOR-MAL-INFORMAL 80 20
SYNTHESIS OF THE RATIONALE AND EDUCATIONAL USEFULNESS OF FORMAL AND INFORMAL TESTS 2
BANNATYNESMITH SMITH SEMINARS

023DIAGNOSIS WISC 80 30
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE WISC TO A CHILD 3
WISC KIT FERINDEN VIDEO CAI SEMINARS FIELDWORK

024DIAGNOSIS ITPA 80 30
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE ITPA TO A CHILD 3
ITPA KIT FERINDEN KIRK VIDEO CAI SEMINARS FIELDWORK

025DIAGNOSIS DTVP 80 10
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE DTVP TO A CHILD 3
FROSTIG FROSTIG VIDEO CAI SEMINARS FIELDWORK

026DIAGNOSIS SIT SORT 80 4
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE SLOSSON INTELLIGENCE TEST TO A CHILD 3
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE SLOSSON ORAL READING TEST TO A CHILD 3
SIT SORT VIDEO CAI SEMINARS FIELDWORK

027DIAGNOSIS WRAT 80 4
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE WRAT TO A CHILD 3
JASTAK VIDEO FIELDWORK

028DIAGNOSIS GATES-MCKIL-LCP RD TEST 80 4
ADMINISTRATION, SCORING, AND INTERPRETATION OF THE GATES-MCKILLCP R-D TEST TO A CHILD 3
GATES VIDEO SEMINARS FIELDWORK

029DIAGNOSIS METRO R-A TESTS 80 4
ADMINISTRATION,SCORING,AND INTERPRETATION OF THE METRO- POLITAN R-A TESTS TO A CHILD 3
HILDRETH DUROST VIDEO CAI SEMINARS FIELDWORK

030DIAGNOSIS CRIT. REF. TESTS 80 80
ATTAIN OBJECTIVES SPECIFIED INEDR 401 2
CONSTRUCT, ADMINISTER, SCORE, INTERPRET, AND REPORT RESULTS OF CRITERION REFERENCED MEAS. 3

EDR 401 SEMINARS FIELDWORK

031DIAGNOSIS ITS 80 20
IDENTIFY AND DEFINE THE ESSENTIAL ELEMENTS AND ATTRIBUTES OF THE CT INSTRUCTIONAL LOGIC 2
SPECIFICATION OF THE RELATIONSHIPS OF THE ELEMENTS AND ATT. TO INDIVIDUALIZING INSTRUCTION 2
BLACKMAN EDLING HUNT REYNOLDS SCHWARTZ
SEMINARS

032DIAGNOSIS PROFILE 80 30
THE PRODUCTION BY THE CTT OF AN INDIVIDUAL PUPIL PROFILE 2
MCTP SEMINARS FIELDWORK

040INTERVENTION RESOURCES SELECTION 80 30
CTT WILL LIST THREE METHODS OF TEACHING, READING AND THE LEARNER CHARACTERISTICS 2
THE CTT WILL LIST TWO METHODS OF TEACHING ARITHMETIC AND LEARNER CHARACTERISTICS 2
CTT WILL MATCH INSTRUCTIONAL RESOURCES TO THE SPECIFIC READING AND MATH OBJECTIVES 3
AUCKERMANDUNCAN NICHOLS MFTIS SEMINARS

041INTERVENTION BEHAVIORAL ENGINEERING 80 70
THE CTT WILL DEFINE SPECIFIC TERMS AND DISCRIBE A TOKEN SYSTEM 2
CTT WILL DISCRIBE ESSENTIAL ELEMENTS AND ATTRIBUTES OF HOMM,S SYSTEM 2
CTT TO PRODUCE BIBLIOGRAPHY, CRITIQUE AND SYNTHESIS OF BEHAVIORAL ENGINEERING 3
ALLEN BUCKLEY BECKER BUGELSKI CRUICK
HEWETT HOMME KOTICK OLBARY WHELAN
SEMINARS

042INTERVENTION PERFORMANCE CONTRACTS 80 20
CTT TO PRODUCE FOUR CONTRACTS FOR PRE-READING, READING, MATH AND SOCIAL BEHAVIORS 3
SEMINARS CONTRACT

043INTERVENTION IMPLEMENTING 80 80
THE CCT WILL DEMONSTRATE INTERVENTION COMPETENCIES IN THEIR PERFORMANCE CONTRACTS 3
THE CTT WILL PRODUCE AND DOCUMENT THE FOUR SPECIFIED PUPIL BEHAVIORS 4
MESSAGE FILE IS OUTPUT
REPORT FILE IS OUTPUT
DEFINE

```
NEW DATA BASE CLINMOD
1)MODULE NUMBER (NAME)
2)MODSS(NAME)
MAP
DEFINE SUB ITEMS
RECORD ID IS MOD
COL 1-30,NAME
COL 31-42,C2,MODSS.KEY
COL 31 - 33,C1,MODNUM.KEY
COL 34-42,SSNO
COL 43,CLASS
COL 44-79/3,COMP
COL 1-17,COMPI
END COMP
COL 80-349/9,OB
COL 1-30,OBI
END OB
COL 350-352/3,LOP
COL 1,LOPI.ALPHA,VALUES (0,1,2,3,4)
END LOP
COL 353-532/20,RA
COL 1-9,RAI
END RA
COL 533-535,SPRO
COL 536-539,ST
COL 540-584/3, STYLE
COL 1-15,STYLE I
END STYLE
COL 585-610,IIS
COL 611-615,DE,DATE ENTERED
COL 616-620,DC,DATE COMPLETE
COL 621-800/20,RU
COL 1-9.RUI
END RU
COL 801-875/5,PROC,PRODUCT
COL 1-15,IPROD,IPRODUCT
END PROC
COL 876-890/5,UBPRC
COL 1-3.CBPROI
END CBPRC
COL 891-893,MODPRC
COL 894-897,TIMF
COL 898-921/2,MN
COLI 1-17,MNI
END MN
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DESCRIBE
END DEFINITION
DATA FILE IS NMF
RECORD FILE IS MODT
LOADER
ISSUE REPORT WHEN LOADING IS COMPLETE
SCAN MOD
MASS UPDATE MOD BY C2
C2=001261967498,DE=09/27,RU(1)=COLE,RU(2)=ITARD,
RU(3)=SCHWARTZ, TIME=0095
C2=001264989903,DE=09/25,RU(1)=KANNER,
RU(2)=ITARD,TIME=0035
C2=001261967498,STYLE (1)=INDEPENDENT,STYLE
(2)=VISUAL, IIS=PRESCRIPTIVE
C2=001264989903,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=001417645525,DE=09/25,RU(1)=ITARD,
RU(2)=KANNER,TIME=0020,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,
IIS=PRESCRIPTIVE
C2=001261882915,DE=09/22,RU(1)=
CCLE,RU(2)=VIDEO,
RU(3)=ITARD,RU(4)=KANNER,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=001261882915,TIME=0100
C2=001266968237,DE=09/25,RU(1)=COLE,
RU(2)=KANNER,TIME=0060,
STYLE(1)=INDEPENDENT, STYLE(2)=VISUAL,
IIS=PRESCRIPTIVE
C2=001423609205,DE=09/25,RU=KANNER,
TIME=0025,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=001263805101,DE=09/21,RU=COLE,
TIME=0035,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=CC1265962945,DE=09/25,RL(1)=ITARD,
RU(2)=COLE,TIME=0020,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS= PRESCRIPTIVE
C2=(C1263C25756,DE=09/27,TIME=0000,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,
IIS=PRESCRIPTIVE
C2=CC1261111472,DE=09/25,RU(1)=KANNER,
RU(2)=SCHWARTZ,TIME=0090,STYLE(1)=
INDEPENDENT,STYLE(2)=VISUAL, IIS=PRESCRIPTIVE
```

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C2=CC1233843766,DE=09/25,RU(1)=TALBOT,
RU(2)=SCHWARTZ,TIME=0080,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS= PRESCRIPTIVE
C2=CC1267197696,DE=09/21,RU(1)=KANNER,
RU(2)=COLE,TIME=0060,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS= PRESCRIPTIVE
C2=C23266942684,DE=09/20,RU=WISC KIT,TIME=0020
C2=C2326942684,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=C24266942684,DE=09/20,RU(1)=ITPA,RU(2)=
FERINDEN,TIME=0030,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=C25266942684,DE=09/20,RU(1)=FROSTIG,TIME=0050,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C231C8428797,DE=09/26,RU(1)=WISC KIT,
RU(2)=FERINDEN,TIME=0060.STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=SELF DIRECTED
C2=020433865222,DE=09/21,RU=BANNATYNE,
TIME= 0005,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=C24433865222,DE=09/20,RU(1)=KIRK,
RU(2)=ITPA KIT, TIME=0044,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=023264968957,DE=09/26,RU=
WISC KIT,TIME=0040,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=C24264968957,DE=09/27,RU=KIRK,
TIME=0030, STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=C24262846084,DE=09/25,RU(1)=VIDEO,
RU(2)=ITPA KIT,STYLE(1)=VISUAL,
TIME=0030,STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=C26261884025,DE=09/27,RU(1)=SLOSSAN,
RU(2)=FIELDWORK,TIME=0045,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C24261884025,DE=09/25,RU(1)=ITPA KIT,
RU(2)=FIELDWORK,RU(3)=FERINDEN,TIME=0100,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C24266929996,DE=09/27,RU=ITPA KIT,TIME=0013,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=024175405002,DE=09/26,RU(1)=ITPA
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KIT,RU(2)=FIELDWORK,TIME=0035,STYLE(1)=
VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=C26175405002,DE=09/27,RU=SLOSSON,RU(2)=
FIELDWORK,TIME=0025,
STYLE(1)=VISUAL,STYLE(2)=INEPENDENT,IIS=SELF
DIRECTED
C2=C26266889329,DE=09/20,RU(1)=SIT,RU(2)=
FIELDWORK,RU(3)=SCRT,TIME=0040,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C24266889329,DE=09/20,RU(1)=VIDEO,
RU(2)=ITPA KIT,RU(3)=FIELDWORK,TIME=0090.
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C03233843766,DE=10/01,RU(1)=MAGER,RU
(2)=LESSINGER,
TIME=0030,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS= PRESCRIPTIVE
C2=C03261111472,DE=09/29,RU=MAGER,
TIME=0038,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS= PRESCRIPTIVE
C2=002265025598,DE=10/C2,RU=SMITH,TIME=0005,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002264989903,DE=10/02,RU=BATEMAN,TIME=0025,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002263805101,DE=10/04,RU=SMITH,TIME=0015,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002417645525,DE=10/03,RU=BATEMAN,TIME=0010,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=023040484514,DE=10/05,RU=WISC KIT,TIME=0019,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=025040484514,DE=10/05,RU(1)=FROSTIG,
RU(2)=VIDEO,TIME=0023,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026040484514,DE=10/05,RU(1)=SIT,RU(2)=SORT,
RU(3)=VIDEO,TIME=0026,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=C27040484514,DE=10/05,RU=WRAT,TIME=0020,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,ISS=SELF
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DIRECTED
C2=C25266929996,DE=10/05,RU=FROSTIG,TIME=0000,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=027261884025,DE=10/05,RU(1)=WRAT,
RU(2)= FIELDWORK,TIME=0032,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=026266929996,DE=10/04,RU(1)=SIT,
RU(2)= SORT,RU(3)=FIELDWORK,TIME=0025,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=028108428797,DE=10/06,RU=GATES,TIME=0040,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026108428797,DE=10/06,RU(1)=SLOSSON,
RU(2)=SORT,RU(3)=VIDEO,TIME=0040,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,ISIS=SELF
DIRECTED
C2=028266942684,DE=10/03,RU=GATES,TIME=0010,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026266942684,DE=10/03,RU(1)=SLOSSON,
RU(2)=VIDEO,TIME=00,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026262849843,DE=10/03,RU(1)=SLOSSON,
RU(2)=FIELDWORK,
TIME=0050,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026433865222,DE=10/05,RU=SCRT,RU(2)=SIT,TIME=0021,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=023433865222,DE=10/01,RU(1)=FERIDEN,
RU(2)=WISC,TIME=0012,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=025175405002,DE=10/04,RU(1)=FROSTIG,
RU(2)=VIDEO,TIME=0023,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026264968957,DE=10/06,RU(1)=SIT,RU(2)=
SCRT,TIME=0040,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
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C2=024262846084,RU=FIELDWORK,TIME=0100
C2=024266929996,RU=KIRK,TIME=0033
C2=001267197696,TIME=0112
C2=001261967498,RU(4)=KIRK,RU(5)=KANNER,
TIME=0340
C2=001264989903,TIME=0050
C2=001264847239,RU(2)=ITARD,RU(3)=KANNER,TIME=0080
C2=024264968957,RU=ITPA KIT,TIME=0095
C2=001265962945,RU=KANNER,TIME=0070
C2=024433865222,RU=FIELDWORK,TIME=0078
C2=001423609205,RU(2)=COLE,RU(3)=ITARD,TIME=0100
C2=001263025756,RU=COLE,TIME=0020
C2=024262849843,RU(2)=ITPA
KII,RU(3)=FIELDWORK,RU(4)=FERIDEN,
TIME=0050
C2=001417645525,RU(3)=TALBOT,RU(4)=COLE,TIME=0080
C2=001265025598,TIME=0042
C2=024266889329,RU=FERIDEN,TIME=0160
C2=026266889329,TIME=0100
C2=002264847239,DE=10/09,RU(8)=KIRK,TIME=0020,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=024261884025,TIME=0155
C2=026261884025,TIME=0075
C2=024766942684,TIME=0080
C2=025266942684,RU=FIELDWORK,TIME=0200
C2=001263984950,RU(2)=ITARD,RU(3)=KANNER,TIME=0145
C2=001266968237,RU(3)=ITARD,RU(4)=TALBOT,TIME=0135
C2=026175405002,TIME=0048
C2=001233843766,RU(3)=KANNER,RU(4)=VIDEO,
RU(5)=ITARD,RU(6)=COLE,TIME=0205
C2=001261111472,RU(2)=ITARD,RU(3)=COLE,
RU(4)=SEMINAR,RU(5)=VIDEO,RU(6)=
TALBOT,TIME=0260
C2=003261111472,RU(2)=ADAMSON,RU(3)=BLACKMAN,
TIME=0056
C2=001264989903,RU=COLE,TIME=0075
C2=002264989903,RU=SMITH,TIME=0051
C2=001264847239,TIME=0115
C2=001265962945,RU=TALBOT,TIME=0135
C2=001263805101,RU=ITARD,TIME=0070
C2=002423609205,RU=WITMER,TIME=0150
C2=001263025756,RU=ITARD,TIME=0040
C2=0024176455225,RU(2)=BINET,RU(3)=BRUEKNER,
RU(4)=FERNALD,RU(5)=JENKINS,
RU(6)=KIRK,RU(7)=SMITH,TIME=0130
C2=001265025598,RU=COLE,TIME=0095
C2=001261882915,TIME=0150
C2=001263984950,RU=TALBOT,TIME=0200
C2=024262846084,RU(1)=VIDEO,RU(2)=FIELDWORK
C2=002423609205,DE=10/09,RU=WITMER,TIME=0035,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002263984950,DE=10/09,RU(1)=BATEMAN,RU(2)=BINET,
TIME=0050,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002261967498,DE=10/06,RU(1)=BATEMAN,
RU(2)=KIRK,RU(3)=FERNALD,
RU(4)=SMITH,TIME=0085,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002261882915,DE=10/03,RU=BATEMAN,TIME=0000,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002267197696,DE=10/09,RU=BINET,TIME=0000,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002233843766,DE=10/64,RU(1)=BATEMAN,
RU(2)=JENKINS,RU(3)=SMITH,
TIME=0075,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRITIVE
C2=002266968237,DE=10/09,RU=BATEMAN,TIME=0045,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,IIS=
PRESCRIPTIVE
C2=002261111472,DE=10/04,RU(1)=FERNALD,
RU(2)=BATEMAN,RU(3)=KIRK,
TIME=0075,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,
IIS=PRESCRIPTIVE
C2=002264847239,RU=BRUEKNER
C2=024262846084,RU(3)=ITPA
KIT,RU(4)=FERINDEN,TIME=0185
C2=024266929996,RU(3)=FIELDWORK,TIME=0068
C2=024040484514,RU(1)=WISC KIT,RU(2)=
FERINDEN,RU(3)=FIELDWORK,TIME=0068
C2=023264968957,TIME=0055
C2=024264968957,TIME=0155
C2=024433865222,TIME=0134
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C2=026262849843,RU(3)=SORT,TIME=0065
C2=024266889329,TIME=0280
C2=026266889329,TIME=0140
C2=026261884025,TIME=0125
C2=027261884025,TIME=0062
C2=025175405002,TIME=0076
C2=026175405002,RU(1)=SIT,RU(2)=SORT,RU
(3)=FIELDWORK,TIME=0078
C2=026266929996,TIME=0055,PROD=SCORE
SHEET,CBPRC=100,MODPRO=100,DC=10/13
C2=001261967498,TIME=0605,PROD=ESSAY
TEST,CBPRC=090,PROD=PAPER,OBPRO=090,
MODPRO=090,DC=10/16
C2=026264968957,TIME=0129,PROD=SCORE
SHEET,OBPRO=100,MODPRO=100,DC=10/13
C2=024261884025,TIME=0180,PROD=RECORD
FORM,OBPR =100,MODPRO=100,DC=10/13
C2=024175405002,RU(3)=FERINDEN,
TIME=0078,PROD=RECORD FORM.CPBRC=100,
MODPRO=100,DC=10/13
C2=025108428797,DE=10/06,RU=FROSTIG,
TIME=0060,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=025261884025,DE=10/10,RU(1)=FROSTIG,
RU(2)=FIELDWORK,TIME=0020,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=025262849843,DE=10/08,RU(1)=FROSTIG,
RU(2)=FIELDWORK,TIME=0070,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=025433865222,DE=10/10,RU=FROSTIG,
TIME=0012,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=025108428797,DE=10/06,RU=FROSTIG,
TIME=0060,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=024262846084,DE=09/25,RU(1)=ITPA
KIT,RU(2)=FERINDEN,RU(3)=FIELDWORK,
RU(4)=VIDEO,TIME=0405,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=023266929996,DE=10/18,RU(1)=WISC
KIT,RU(2)=FIELDWORK,TIME=0030,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
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DIRECTED
C2=002233843766,RU(4)=BINET,RU(5)=
BRUEKNER,RU(6)=FERNALD,
RU(7)=KIRK,RU(8)=WITMER,RU(9)=SEMINAR,TIME=0180
C2=003233843766,RU(3)=SCHWARTZ,TIME=0050
C2=003233843766,RU(4)=ADAMSON,RU(5)=BLACKMAN,
RU(6)=DENO,RU(7)=HARING,TIME=0175
C2=025040484514,RU(3),FIELDWORK,TIME=0023
C2=026040484514,TIME=0051
C2=027040484514,TIME=0038
C2=001267197696,TIME=0142,PROD=ESSAY TEST,OBPRC=085
C2=002267197696,RU(2)=KIRK,RU(3)=BRUEKNER,
RU(4)=SEMINAR,TIME=0107
C2=003267197696,DE=10/23,RU(1)=SCHWARTZ,
RU(2)=SEMINAR,TIME=0032,
STYLE(1)=INDEPENDENT,STYLE(2)=VISUAL,
IIS=PRESCRIPTIVE
C2=001261111472,TIME=0390,PROD=ESSAY TEST,OBPRO=100
C2=002261111472,RU(4)=BINET,RU(5)=JENKINS,
RU(6)=WITMER,RU(7)=BRUEKNER,
RU(8)=SMITH,TIME=0265
C2=003261111472,RU(4)=SCHWARTZ,RU(5)=
LESSINGER,RU(6)=DENO,
RU(7)=HARING,TIME=0259
C2=002261967498,RU(5)=BRUEKNER,RU(6)=BINET,
RU(7)=WITMER,RU(8)=JENKINS,TIME=0640
C2=001264989903,RU(4)=TALBOT,TIME=0123,PROD=ESSAY
TEST,OBPRO=100
C2=002264989903,RU(3)=FERNALD,TIME=0103
C2=003264989903,DE=10/25,RU(1)=MAGER,
TIME=0012,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=001264847239,RU(4)=TALBOT,TIME=0205,
PROD=ESSAY TEST,OBPRC=090
C2=002264847239,RU(1)=BRUEKNER,RU(2)=BATEMAN,
RU(3)=WITMER,RU(4)=SMITH,TIME=0105
C2=022264968957,DE=10/20,RU(1)=BANNATYNE,
TIME=0030,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=023264968957,TIME=0080
C2=024264968957,TIME=0195
C2=030264968957,DE=10/09,RU(1)=EDR
401,TIME=0005,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=001265962945,TIME=0220
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C2=002265962945,DE=10/16,RU(1)=FERNALD,
RU(2)=JENKINS,TIME=0060,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=PRESCRIPTIVE
C2=001263805101,RU(3)=KANNER,TIME=0100,RU(4)=TALBOT
C2=002263805101,RU(2)=BATEMAN,RU(3)=KIRK,TIME=0055
C2=024433865222,RU(4)=FERINDEN,TIME=0234
C2=025433865222,TIME=0018
C2=030433865222,DE=10/15,RU(1)=EDR
401,TIME=0005,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=CC1423609205,PROD=ESSAY
TEST,OBPRO=080,TIME=C100
C2=C02423609205,RL(2)=BATEMAN,RU(3)=KIRK,
RU(4)=BRUEKNER,RU(5)=SMITH,TIME=0125
C2=CC1263025756,RL(3)=TALBOT,RU(4)=KANNER, TIME=0125
C2=C02263025756,DE=10/25,TIME=0000,STYLE(1)=
VISUAL,STYLE(2)=INDEPENDENT,IIS=PRESCRIPTIVE
C2=C23262849843,DE=10/21,RU(1)=WISC
KIT,RU(2)=FIELDWORK,TIME=0090,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,ISS=SELF
DIRECTED
C2=CC1265C25598,DE=09/21,RU(4)=ITARD,
TIME=0025,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=CC2263984950,RU(1)=BRUEKNER
C2=C02261111472,RU(1)=BRUEKNER
C2=CC1263984950,DE=09/25,RU(1)=COLE,TIME=
0030,STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=CC1264847239,DE=09/25,RU(1)=COLE,TIME=0030,
STYLE(1)=INDEPENDENT,
STYLE(2)=VISUAL,IIS=PRESCRIPTIVE
C2=C23175405002,DE=1C/16,RU(1)=WISC
KIT,RU(2)=FIELDWORK,
RU(3)=FERINDEN,TIME=0048,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=C23175405002,PROD(1)=ADMINISTRATION,
OBPRC(1)=100,
PROC(2)=RECORD BOOKLET,OBPRO(2)=100,PRCD(3)=
CLINICAL REPORT,OBPRC(3)=100,MODPRO=100,DC=10/20
C2=C25266889329,DE=10/12,RU(1)=FROSTIG,
RU(2)=FIELDWORK,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS/SELF
DIRECTED
```

```
C2=CC2263984950,TIME=0340
C2=C02417645525,TIME=0070
C2=C03261111472,TIME=0344
C2=C271C8428797,DE=10/25,RU(1)=JASTAK,RU(2)=
FIELDWORK,TIME=0040,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=C30264968957,TIME=0015
C2=C25264968957,RU(1)=FRCSTIG,RU(2)=VICEC,
RU(3)=FIELDWORK,DE=11/03,TIME=0045,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT, IIS=SELF DIRECTED
C2=C03261967498,DE=11/01,RU(1)=LESSINGER,
RU(2)=DENC,RU(3)=PARING,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=
PRESCRIPTIVE
C2=C24040484514,DE=11/05,RU(1)=ITPA
KIT,RU(2)=SCHWARTZ,TIME=075,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C26108428797,DE=10/25,RU(1)=SIT,TIME=0120,
RU(2)=FIELDWORK,VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=C25266929996,RU(2)=FIELDWORK,TIME=0010
C2=C252669996,TIME=0027
C2=C282669996,DE=11/02,RU(1)GATES,RU(2)=
FIELDWORK,TIME=0010,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=CC1233843766,TIME=0235,PROD(1)=
ESSAY TEST,OBPRO=100
C2=C02233843766,TIME=0190
C2=CC32843766,TIME=0195
C2=C0267197696,RU(3)=LESSINGER,RU(4)=SEMINAR,
RU(5)=DENO,TIME=0124
C2=C01261111472,TIME=0460
C2=C02%61111472,TIME=0285
C2=C01261967498,TIME=0635,PROD(1)=ESSAY
TEST,OBPRO(1)=100
C2=C02264989903,TIME=0118
C2=C03264989903,RU(2)=DENC,RU(3)=LESSINGER,
TIME=0077
C2=C02264847239,RU(5)=BINET,TIME=0150
C2=C03264847239,DE=10/30,RU(1)=DENC,
RU(2)= LESSINGER,TIME=0050,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=C24264968957,RU(3)=FERINDEN,TIME=0245
C2=C01265962945,TIME=0250,PROD(1)=ESSAY
```

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TEST,OBPRO(1)=090
C2=C02265962945,RU(3)=BATEMAN,TIME=0105
C2=C03265962945,DE=10/28,RU(1)=LESSINGER,
RU(2)=DENO,TIME=0020,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=C01263805105,TIME=0110,PROD(1)/ESSAY
TEST,OBPRO=080
C2=C03263805101,DE=11/01,RU(1)=DENO,RU(2)=
LESSINGER,TIME=0020,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=C03423609205,DE=10/30,RU(1)=DENO,RU(2)=
LESSINGER,TIME=0080,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,ISS= PRESCRIPTIVE
C2=C01263025756,TIME=0155
C2=C03417645525,RU(5)=LESSINGER,RU(6)=
MAGER,RU(7)/CHWARTZ,TIME=0115
C2=C01265025598,TIME=0200,PROD(1)=ESSAY
TEST,OBPRO(1)=085
C2=C02265025598,RU(2)=BATEMAN,TIME=0045
C2=C0326502598,DE=10/31,RU(1)=DENO,TIME=0010,
STYLE(1)=VISUAL.
STYLE(2)=INDEPENDENT,IIS=PRESCRIPTIVE
C2=C02261882915,TIME=0175
C2=C003261882915,DE=10/31,RU(1)=LESSINGER,
RU(2)=DENO,TIME=0035,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=C23266889329,RU(2)=FERINDEN,RU(3)=
FIELDWORK,TIME=0170,PROD(1)=ADMINISTRATION,
OBPRO(1)=080,MODPRO=080,DC=11/02
C2=C23261884025,DE=10/25,RU(1)=WISC KIT,
RU(2)=FERINDEN,RU(3)=FIELDWORK,TIME=0055,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=23261884025,TIME=0135
C2=C2521884025,TIME=CC46,PROD(1)=
ADMINISTRATION,OBPRO=100,MODPRO=100,DC=11/02
C2=C23266942684,TIME=0080
C2=C24266942684,RU(4)=KIRK,TIME=0380
C2=C25266942684,TIME=0255
C2=C28266942684,TIME=0020
C2=C03263984950,DE=10/30,RU(1)=DENO,RU(2)=
LESSINGER,TIME=0050,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=C02266968237,RU(4)=BRUEKNER,RU(5)=WITMER,
TIME=0285
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C2=C03266968237,DE=10/26,RU(1)=HARING,RU(2)=
LESSINGER,RU(3)=BLACKMAN,RU(4)=ADAMSON,RU(5)=
DENO,TIME=0075,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=C27175405002,DE=10/31,RU(1)=JASTAK,RU(2)=
FIELDWORK,TIME=0023,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=C28175405002,DE=10/28,RU(1)=GATES,RU(2)=
FIELDWORK,TIME=0035,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C30175405002,DE=10/27,RU(1)=EDR 401,TIME=0047,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=C26266889329,TIME=0150,PROD(1)=
ADMINISTRATION,OBPRO=100,PROD(2)=SCORESHEET,
CRPRC=100,MODPRC=100,DE=10/20
C2=C2517540[illegible]02,TIME=0080,PROC(1)=
ADMINISTRATION,OBPRO=090,PROD(2)=RECORD
BOOKLET,OBPRO(2)=090,PRCD(3)=WRITE-UP,OBPRO=090
MODPRO=C9C,DC=10/20
C2=C262669996,TIME=0032,PROD(1)=SCORESHEET,
CEPRO(1)=100,MODPRO=100,DC=10/13
C2=C2426284948,TIME=0140,PRCD=RECORD
FORM,CBPRC=100,MODPRO=100,DE=10/13
C2=C25262849843,RU(3)=VIDEO,
TIME=0110,PRCD(1)=ADMINISTRATION,OBPRO
(1)=100,PROD(2)=RECORDBOOKLET,
OBPRC(2)=100,PROD(3)=WRITE-UP,OBPRO(3)=100,
MODPRC=095,DC=10/20
C2=C01417645525,TIME=0145,PROD=ESSAY TEST,OBPRC=085
C2=C02417645525,RU(8)=WITMER,RU(9)=SEMINAR,
TIME=0220,PROD=ESSAY TEST,OBPRO=C9C
C2=C0341765525,DE=10/16,RU(1)=WITMER,STYLE(1)=
VISUAL,
STYLE(2)=INDEPENDENT,ISS=PRESCRIPTIVE,RU(2)=
BLACKMAN,
RU(3)=DENO,RU(4)=HARING,TIME=C035
C2=C01265025598,RU(1)=COLE,RU(2)=KANNER,RU(3)=
TALBOT,TIME=0190
C2=C01261882915,TIME=0170,PROD=ESSAY TEST,CBPRC=090
C2=C02261882915,DE=10/18,STYLE(1)=
VISUAL,STYLE(2)=INDEPENDENT,IIS=
PRESCRIPTIVE,RU(2)=BRUCKNER,
RU(3)=KIRK,RU(4)=SMITH,TIME=0155
```

```
C2=C23266889329,DE=10/25,RU(1)=WISC KIT,TIME=0020,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=024266889329,TIME=0425,PROD(1)=
ADMINISTRATION,OBPRO=090,PROD(2)=RECORD
BOOKLET,OBPRC(2)=090, PRCD(3),=WRITE-UP,OBPRO=090,
MODPRO=C9C,DE=10/20
C2=C27266889329,DE=10/17,RU(1)=JASTAK,
RU(2)= FIELDWORK,TIME=0035,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS= PRESCRIPTIVE
C2=C27266889329,IIS=SELF DIRECTED,TIME=0035
C2=C27261884025,TIME=0082,PROD(1)=
ADMINISTRATION,OBPRO=095,PROD(2)=SCORE SHEET,
OBPRC=095,MODPRO=095,DC=10/20
C2=C23266952684,TIME=0050
C2=C24266942684,RU(3)=FIELDWORK,TIME=0260
C2=C25266942684,TIME=0245
C2=C26266942684,RU(3)=FIELDWORK,TIME=0080
C2=CC1263984950,TIME=0230,PROD=ESSAY
TEST,OBPRC=085
C2=C02263984950,RU(3)=FERNALD,RU(4)=BRUEKNER,
RU(5)=SMITH,TIME=0090
C2=C02263984950,RU(6)=KIRK,RU(7)=JENKINS,TIME=0285
C2=C02266968237,RU(2)=BINET,RU(3)=KIRK,TIME=0185
C2=C26175405002,TIME=0083,PROD(1)=
ADMINISTRATION,OBPRO(1)=100,PROD(2)=SCORE SHEET,
OBPRC=100,MODPRO=100,DE=10/20
C2=C25266889329,TIME=0130,PROD(1)=DEMONSTRATION,
OBPRO=100,PRCD(2)= ADMINISTRATION,OBPRO=100,
PROD(3)=CLINICAL REPORT,OBPRC=100,
MODPRO=100,DC=10/27
C2=C01263984950,RU(2)=ITARD,RU(3)=TALBOT
C2=C29262846084,DE=11/07,RU(1)=HILDRETH,RU(2)=
FIELDWORK,TIME=0020,STYLE(1)=VISUAL,STY
LE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=C24266929996,RU(3)=FERINDEN,TIME=0230,
MODPRC=100,DC=11/10
C2=C25266929996,TIME=0070,MODPRO=100,DC=11/10
C2=C28266929996,TIME=0020
C2=CC2233843766,TIME=0230,PROD(1)=ESSAY
TEST,OBPRO(1)=080
C2=003233843766,TIME=0220
C2=023040484514,TIME=0022,MODPRO=100,DC=11/10
C2=024040484514,TIME=0095
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C2=025040484514,TIME=0054,MODPRO=100,DC=11/10
C2=002267197696,RU(5)=FERNALD,RU(6)=SMITH,TIME=0175
C2=002261111472,TIME=0345
C2=003261111472,TIME=0370
C2=003261967498,RU(4)=ADAMSON,RU(5)=SCHWARTZ,
RU(6)=MAGER,TIME=0095
C2=002264989903,RU(4)=BRUEKNER,RU(5)=WITMER,
TIME=0165
C2=002264847239,RU(6)=FERNALD,(RU(7)=JENKINS,
TIME=0230
C2=023264968957,RU(2)=FERINDEN,TIME=0120,
MODPRO=100,DC=11/10
C2=024264968957,TIME=0240,MODPRO=100,DC=11/10
C2=025264968957,TIME=0045
C2=028264968957,DE=11/06,RU(1)=GATES,TIME=
0025,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=031264968957,DE=11/09,RU(1)=REYNOLDS,
TIME=0010,STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=002265962945,RU(4)=BRUEKNER,TIME=0150
C2=003265962945,TIME=0050
C2=002263805101,RU(4)=BRUEKNER,RU(5)=WITMER,
TIME=0060
C2=003263805101,RU(3)=HARING,TIME=0035
C2=023433865222,RU(2)=WISC KIT,RU(3)=
FIELDWORK,TIME=0138
C2=024433865222,TIME=0317,PROD(1)=ADMINISTRATION,
OBPRO(1)=100,
PROD(2)=WRITE-UP,OBPRO(2)=100,MODPRO=100,DC=11/10
C2=025433865222,RU(3)=FIELDWORK,TIME=0082
C2=028433865222,DE=11/06,RU(1)=GATES,TIME=
0041,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS/SELF DIRECTED
C2=030433865222,TIME=0010
C2=031433865222,DE=11/09,RU(1)=HUNT,
RU(2)=REYNOLDS,TIME=0018,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=026108428797,TIME=0180,PROD(1)=ESSAY
TEST,OBPRO(1)=100,
MODPRO=100,DC=11/10
C2=002423609205,RU(6)=BINET,RU(7)=JENKINS,
TIME=0200,PROD(1)= ESSAY TEST,
OBPRO(1)=090
```

```
C2=001263025756,TIME=0300,PROD(1)=ESSAY TEST,
OBPRO(1)=100
C2=023262849843,RU(3)=FERINDEN,TIME=0190,
PROD(1)=ADMINISTRATION,
OBPRO(1)=100,MODPRO=100,DC=11/10
C2=026262849843,TIME=0070,PROD(1)=ADMINISTRATION,
OBPRO=100,
MODPRO=100,DC=11/10
C2=028262849843,DE=11/03,RU(1)=GATES,RU(2)=
FIELDWORK,TIME=0060,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=028262849843,TIME=0070,MODPRO=090,DC=11/10
C2=030262849843,RU(1)=FIELDWORK,RU(2)=SORT,
TIME=0015,DE=11/10,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=003417645525,RU(8)=SEMINAR,RU(9)=ADAMSON,
TIME=0175
C2=002265025598,RU(3)=KIRK,RU(4)=WITMER,TIME=0160
C2=023261884025,TIME=0165,MODPRO=100,DO=11/10
C2=024261884025,TIME=0215
C2=025261884025,TIME=0065
C2=028261884025,DE=11/08,RU(1)=GATES,RU(2)=
FIELDWORK,TIME=0020,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=002263984950,TIME=0490,PROD(1)=ESSAY TEST,
OBPRO(1)=085
C2=003263984950,TIME=0070
C2=002266968237,TIME=0290,PROD(1)=ESSAY TEST,
OBPRO(1)=085
C2=003266968237,RU(5)=SCHWARTZ,RU(6)=MAGER,
TIME=0100,PROD(1)=ESSAY TEST,
OBPRO=070
C2=027175405002,TIME=0030,MODPRO=090,DC=11/10
C2=028175405002,TIME=0040,MODPRO=090,DC=11/10
C2=029175405002,RU(1)=HILDRETH,RU(2)=DUROST,
RU(3)=FIELDWORK,
TIME=0015,STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=030175405002,TIME=0070
C2=032175405002,DE=11/07,RU(1)=FIELDWORK,
TIME=0012,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
```

```
C2=029262849843,TIME=0030,MODPRO=100,DC=11/17
C2=023266942684,RU(2)=FIELDWORK,
RU(3)=FERINDEN,TIME=0135
C2=029261884025,TIME=0024,MODPRO=100,DC=11/17
C2=024266942684,RU(1)=ITPA KIT,TIME=0435,
MODRPO=100,DC=11/17
C2=028261884025,RU(1)=GATES,RU(2)=FIELDWORK,
RU(3)=VIDEO,TIME=0090,
MODPRO=100,DC=11/17
C2=029261884025,DE=11/15,RU(1)=HILDRETH,
RU(2)=DUROST,RU(3)=FIELDWORK,
TIME=0000,STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=032262849843,DE=11/16,RU(1)=WISC
KIT,RU(2)=FIELDWORK,TIME=0030,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS= SELF
DIRECTED
C2=029266889329,DE=11/12,TIME=0030,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=029262849843,DE=11/15,RU(1)=HILDRETH,
RU(2)=FIELDWORK,RU(3)=DUROST.
TIME=0030,STYLE(1)=VISUAL,STYLE(2)=
INDEPENDENT,IIS=SELF DIRECTED
C2=027264968957,DE=11/15,TIME=0010,STYLE
(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=002433865222,DE=11/17,TIME=0005,STYLE
(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=029264968957,DE=11/14,TIME=0010,STYLE
(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=002264989903,RU(7)=JENKINS,RU(6)=KIRK,
RU(8)=BINET,TIME=0220,
PROC(1)ESSAY TEST,OBPRO(1)=100
C2=025433865222,TIME=0145,MODPRO=100,DC=11/17
C2=027262846084,DE=11/13,RU(1)=JASTAK,TIME=0030,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECED
C2=028262846084,DE=11/14,RU(1)=GATES,TIME=0040,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=002233843766,TIME=0290,PROD(2)=ESSAY TEST,
OBPRO(2)=095
C2=003233843766,TIME=0260
C2=002267197696,TIME=0195,PROD(1)=ESSAY TEST,
OBPRO(1)=095
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C2=003267197696,TIME=0176
C2=002261111472,TIME=0380
C2=003261111472,TIME=0405
C2=031261111472,DE=11/13,RU(1)=REYNOLDS,
TIME=0025,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=003261967498,RU(7)=BLACKMAN,TIME=0260
C2=003264989903,TIME=0097
C2=003264989903,TIME=0097
C2=002264847239,TIME=0230,PROD(1)=ESSAY TEST,
OBPRO(1)=095
C2=002265962945,RU(5)=SMITH,TIME=0150
C2=003265962945,TIME=0060
C2=002263805101,RU(6)=FERNALD,TIME=0080
C2=023433865222,TIME=0180
C2=028433865222,TIME=0053
C2=023108428797,RU(3)=FIELDWORK,TIME=0120,
PROD(1)=ADMINISTRATION,
OBPRO(1)=100,MODPRO(1)=100,DC=11/17
C2=003423609205,RU(3)=BLACKMAN,
RU(4)=HARING,TIME=0150
C2=002263025756,TIME=0020
C2=003417645525,TIME=0245,PROD(1)=ESSAY
TEST,OBPRO(1)=100
C2=002265025598,RU(5)=BINET,RU(6)=JENKINS,TIME=0213
C2=003261882915,RU(3)=ADAMSON,RU(4)=BLACKMAN,
TIME=0115
C2=027266889329,TIME=0095,PROD(1)=ADMINISTRATION,
OBPRO(1)=100,MODPRO=100,DC=11/17
C2=028266889329,TIME=0090,PROD(1)=ADMINISTRATION,
OBPRO(1)=100,MODPRO=100,DC=11/17
C2=029266889329,TIME=0000,PROD(1)=ADMINISTRATION,
OBPRO(1)=100,MODPRO=100,DC=11/17
C2=026261884025,RU(1)=SIT,RU(2)=SORT,TIME=0130,
MODPRO=100,DC=11/17
C2=025266942684,TIME=0265,MODPRO=100,DC=11/17
C2=026266942684,TIME=0100,PROD(1)=ADMINISTRATION,
OBPRO(1)=100,MODRPRO=100,
DC=11/17
C2=028266942684,TIME=0070
C2=003266968237,RU(7)=SEMINAR,RU(8)=FIELDWORK,
RU(9)=DENO,TIME=0180
C2=030175405002,TIME=0100
C2=032175405002,RU(2)=MOTP,RU(3)=SEMINAR,TIME=0125
C2=028264968957,TIME=0075
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C2=022264968957,TIME=0050
C2=025264968957,TIME=0085
C2=028266889329,DE=11/11,RU(1)=GATES,RU(2)=
FIELDWORK,TIME=0000,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=030266889329,DE=11/15,RU(1)=FIELDWORK,
TIME=0030,STYLE(1)=VISUAL,
STYLE(2)=INDEPENDENT,IIS=SELF DIRECTED
C2=032266889329,DE=11/15,RU(1)=FIELDWORK,TIME=0050,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,IIS=SELF
DIRECTED
C2=027266942684,DE=10/30,RU(1)=JASTAK,TIME=0025,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT,
IIS=SELF DIRECTED
C2=024262849843,DE=09/20,RU(1)=ITPA KIT,
RU(2)=FERINDEN,RU(3)=VIDEO,
RU(4)=FIELDWORK,TIME=0180,STYLE(1)=VISUAL,
STYLE (2)=INDEPENDENT,IIS=SELF DIRECTED
C2=027262849843,DE=10/06,RU(1)=JASTAK,
RU(2)=FIELDWORK,TIME=0060,PROD(1)=ADMINISTRATION,
OBPRO(1)=095,PROD(2)=SCORE SHEET,OBPRO(2)=095,
STYLE(1)=VISUAL,STYLE(2)=INDEPENDENT
C2=027262849843,IIS=SELF DIRECTED,
MODPRO=095,DC=10/20
FINIS
SAVE DATA BASE ON MTABLE
EXIT
7
```

UPDATE PROCEDURES

The "CTM" program package normally exists as a permanent file on disk. In the event of permanent file logs, the System will respond with the message, "Update not found" or "Scan not found." It depends on which one you are trying to access — in any case, there are three possibilities:

1. You typed "update" or "scan" wrong, so try again.
2. You are not allowed to use the system.
3. The files "update," or "scan" are not currently on the disk. There are 2 ways to load them back:
    - A. Submit the "CTM" deck to the input/output room.
    - B. Submit the "CTM" back-up tape. Dr. Oseroff has the deck and the tape. The tape contains a copy of the deck.

The data base, records and reports are on another tape, Density HI, FSU No. 1305, located in JJ-12. The backup for this type is another tape with Dr. Oseroff.

SAMPLE PRINT-OUT

```
73/07/26.14.08.27.
KRONOS VERSION 2.01. LEV 11.2.
USER NUMBER:  5616002,3060884
TERMINAL:  64
SYSTEM: BATCH,30000
SREL,30000.
/
  11.31.15. WARNING
NO D/A PERM FILE SPACE PURGE UNNEEDED FILES.
GET SCAN/UN=5616002
/CALL,SCAN
1 REPORT IS NOT ON FILE. THERE WILL BE A SLIGHT
  DELAY BEFORE YOU ARE ABLE TO SCAN THE CURRENT
  REPORT.
  IF THE COMPUTER CENTER IS VERY BUSY IT MAY TAKE
  AS LONG AS 15 MINUTES.
  LEAVE YOUR TERMINAL ON. WHEN THE SYSTEM IS
  READY IT WILL INDICATE SUCH WITH THE NORMAL
  MESSAGE.
    CLINICAL TEACHER MODEL      SCAN VER. 1.0
?S,262846084
```

FLORIDA STATE UNIVERSITY
CLINICAL TEACHER MODEL
INDIVIDUAL CLINICAL TEACHER TRAINEE PERFORMANCE REPORT
JUNE 01, 1973

STUDENT NAME: ADAMS, DIANNE
?M
SOCIAL SECURITY NO. 2628460

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM.	RESOURCES AVAILABLE	STAND. PROFI- CIENCY
DIA-027 WRAT	ADMINISTRATION, SCORING, AND INTERPRETATION OF THE WRAT TO A CHILD	PERFORM	JASTAK VIDEO FIELDWORK	80
COMPETENCY DIAGNOSIS				

LEARNER CHARACTERISTICS

STUDENT NAME: ADAMS, DIANNE
SOCIAL SECURITY NO. 262846

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

```
=====================================================================================
                                   P E R F O R M A N C E
=====================================================================================
 ENTRY DATE • DATE COMP•RESOURCES•    PRODUCTS    •PROFICIENCY•ACTUAL TIME
•••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
     11/13   •            •JASTAK     •ADMINISTRATION•100       •
             •    12/04   •           •  SYNTHESIS   •100       •
•••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
?STOP
-
  TERMINATED
/BYE

5616002   LOG OFF.   14.22.50.
5616002   CP         1.789 SEC.
```

FLORIDA STATE UNIVERSITY
CLINICAL TEACHER MODEL
INDIVIDUAL CLINICAL TEACHER TRAINEE PERFORMANCE REPORT
FEBRUARY 16, 1973

STUDENT NAME: ADKINS, LEA
SOCIAL SECURITY NO. 266929996

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFICIENCY	STANDARD TIME
DIA-023 WISC	ADMINISTRATION, SCORING AND INTERPRETATION OF THE WISC TO A CHILD	PERFORM	WISC KIT FERINDEN VIDEO CAI SEMINARS FIELDWORK	8	30
COMPETENCY DIAGNOSIS					

LEARNER CHARACTERISTICS

STUDENT NAME: ADKINS, LEA
SOCIAL SECURITY NO. 266929996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

PERFORMANCE

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
10/18		WISC KIT FIELDWORK FERINDEN			010.0
	11/10		SYNTHESIS	100	

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFI-CIENCY	STANDARD TIME
DIA-924 ITPA COMPETENCY DIAGNOSIS	ADMINISTRATION, SCORING, AND INTERPRETATION OF THE ITPA TO A CHILD	PERFORM	ITPA FERINDEN KIRK VIDEO CAI SEMINARS FIELDWORK	80	30

LEARNER CHARACTERISTICS

STUDENT NAME: ADKINS, LEA SOCIAL SECURITY NO. 266929996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

PERFORMANCE

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
09/27	11/10	ITPA KIT KIRK FERINDEN	SYNTHESIS	100	013.0

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFI- CIENCY	STANDARD TIME
DIA-025	ADMINISTRATION, SCORING,		FROSTIC	80	10

DTVP COMPETENCY DIAGNOSIS	AND INTERPRETATION OF THE DTVP TO A CHILD	PERFORM	FROSTIC VIDEO CAI SEMINARS FIELDWORK		

LEARNER CHARACTERISTICS

STUDENT NAME: ADKINS, LEA

SOCIAL SECURITY NO. 266929996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

PERFORMANCE

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
10/05	11/10	FROSTIC FIELDWORK	SYNTHESIS	100	007.0

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFICIENCY	STANDARD TIME
DIA-026 SIT SORT	ADMINISTRATION, SCORING, AND INTERPRETATION OF THE SLOSSON INTELLIGENCE TEST TO A CHILD	PERFORM	SIT SORT VIDEO CAI SEMINARS FIELDWORK	80	4
COMPETENCY DIAGNOSIS	ADMINISTRATION, SCORING, AND INTERPRETATION OF THE SLOSSON ORAL READING TEST TO A CHILD	PERFORM			

LEARNER CHARACTERISTICS

STUDENT NAME: ADKINS, LEA

SOCIAL SECURITY NO. 266929996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

PERFORMANCE

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
10/04		SIT SORT FIELDWORK	SCORE SHEET	100	003.2
	10/03		SYNTHESIS	100	

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFICIENCY	STANDARD TIME
DIA-027 WRAT COMPETENCY DIAGNOSIS	ADMINISTRATION, SCORING, AND INTERPRETATION OF THE WRAT TO A CHILD	PERFORM	JASTAK VIDEO FIELDWORK	80	4

L E A R N E R   C H A R A C T E R I S T I C S

STUDENT NAME: ADKINS, LEA SOCIAL SECURITY NO. 26692996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

P E R F O R M A N C E

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
11/29		FIELDWORK	SYNTHESIS		.8

T A S K   C H A R A C T E R I S T I C S

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFICIENCY	STANDARD TIME
DIA-028 GATES-McKIL-	ADMINISTRATION. SCORING, AND INTERPRETATION OF THE GATES-McKILLOP R-D	PERFORM	GATES VIDEO – SEMINARS	80	4

LOP RD TEST COMPETENCY DIAGNOSIS	TEST TO A CHILD		FIELDWORK	

LEARNER CHARACTERISTICS

STUDENT NAME: ADKINS, LEA

SOCIAL SECURITY NO. 266929996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT PRESCRIPTIVE	SELF DIRECTED

PERFORMANCE

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
11/02		GATES FIELDWORK	SYNTHESIS		002.0

TASK CHARACTERISTICS

MODULE	OBJECTIVES	LEVEL OF PERFORM	RESOURCES AVAILABLE	STANDARD PROFI- CIENCY	STANDARD TIME
DIA-032 PROFILE COMPETENCY DIAGNOSIS	THE PRODUCTION BY THE CTT OF AN INDIVIDUAL PUPIL PROFILE	KNOWLED	MCTP SEMINARS FIELDWORK	80	30

LEARNER CHARACTERISTICS

STUDENT NAME: ADKINS, LEA

SOCIAL SECURITY NO. 266929996

STYLE	INDIVIDUALIZED INSTRUCTIONAL STRATEGY
VISUAL INDEPENDENT	SELF DIRECTED

PERFORMANCE

ENTRY DATE	DATE COMP	RESOURCES	PRODUCTS	PROFICIENCY	ACTUAL TIME
01/08		FIELDWORK	SYNTHESIS		49.0

```
                   GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT
DATE COMPLETED       NAME                        TIME             PROFICIENCY
03/13                ADKINS, LEA                 160.0                90

03/15                PATRICK, FRANCES             45.0               100

04/06                WILLIAMS, GLORIA             44.0                90
•••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
                       SUMMARY
DATE OF REPORT=05/26/73  MODULE NUMBER=43                 TOTAL NO. OF STUDENTS=3
TIME AVG.=83.0           PROFICIENCY AVG=93.0
```

APPENDIX F

STATEMENTS ON THE RELIABILITY AND VALIDITY OF THE METROPOLITAN ACHIEVEMENT TESTS

General

This latest edition of the Metropolitan Achievement Tests is to be applauded for scope, both vertical and horizontal, for the quality of individual test questions, for the measurement of important outcomes, for careful standardization, for clear and attractive format, and for efficient accessory materials, but especially for the outstanding Manual For Interpreting. Limitations have been indicated in the item types used to measure proficiency in spelling and language and in the inadequacy of measuring poor learners. In the final summary, nevertheless, this is a superior test series representative of the high quality and usability of modern achievement tests with as fine an interpretative manual as is to be found. [W. Findley. In O. Buros (Ed.), ***Sixth Mental Measurements Yearbook.*** Highland Park, N.Y.: Gryphon Press, 1965, p.67.]

Reading

Reliability for each subtest is good (.79 to .96) and a measure of validity has been obtained through careful study of curricula, judgement of experts and repeated experimentation . . . [H. Alan Rudson, Buros, p. 797.]

Arithmetic

All reliability coefficients are "corrected split-half" coefficients. Median single grade coefficients range from .80 to .92, with individual single grade coefficients ranging from .82 to .95. The manual states that "this test battery is not intended to measure the speed with which children can answer test questions." Validity is supported in terms of curricula by data relating to the selection of content at each level, and statistically by corelations between test scores and various mental ability tests. [E. W. Hamilton, Buros, pp. 628-629.]

APPENDIX G

FLORIDA STATE UNIVERSITY
COLLEGE OF EDUCATION
DIVISION OF PROFESSIONAL AND CLINICAL PROGRAMS
PROGRAM OF SPECIAL EDUCATION

Interrelated Areas of Special Education
Clinical Teacher Competency Rating Scale

This equal interval graphic rating scale has been designed to enable Clinical Teachers to *assess their own performance* using the *generic competencies* of the Clinical Teacher System. Carefully read each item and *circle the verbal descriptor* which *most accurately* represents *your performance.* You are requested to complete and return this form *twice* during the 1974-75 year. The first due date is January 20, 1975, and the second on May 20, 1975.

The information obtained will remain confidential and only group data will be displayed in the Final Report of the Clinical Teacher Project.

Name ______________________________ Date ______________

School ____

Address ____

Total number of children served ____________

Categorical classification __________ EMR
__________ SLD
__________ ED
__________ Others (list)

Comments:

1. Systematically observed academic and social behaviors of referred pupil in regular class and/or resource room.

Always	Very Frequently	Frequently	Seldom	Never

2. Informally observed pupil in regular class and/or resource room.

Always	Very Frequently	Frequently	Seldom	Never

3. Administered, scored, and interpreted standardized norm-referenced tests.

Always	Very Frequently	Frequently	Seldom	Never

4. Administered, scored, and interpreted criterion-referenced tests.

Always	Very Frequently	Frequently	Seldom	Never

5. Summarized diagnostic data and identified individual learner entry levels and characteristics.

Always	Very Frequently	Frequently	Seldom	Never

6. Wrote individual pupil profile, based upon diagnostic summary.

Always	Very Frequently	Frequently	Seldom	Never

7. Selected individualized reading and/or arithmetic modules.

Always	Very Frequently	Frequently	Seldom	Never

8. Specified motivational contingencies and learning environment.

Always	Very Frequently	Frequently	Seldom	Never

9. Wrote Clinical Teacher Individual Pupil Plan containing performance contract.

Always	Very Frequently	Frequently	Seldom	Never

10. Conducted the planned instruction by providing pupil learning materials, strategies, and environment.

Always	Very Frequently	Frequently	Seldom	Never

11. Monitored pupil and curriculum performance by observing and recording pupil progress.

Always	Very Frequently	Frequently	Seldom	Never

12. Assessed, analyzed, and reported the effectiveness and efficiency of the instruction.

Always	Very Frequently	Frequently	Seldom	Never

APPENDIX H

GROUP CLINICAL TEACHER PERFORMANCE REPORT (JUNIORS AND SENIORS 1972-73)

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
05/02	CHAMBERS, WILLIAM N.	14.2	80
10/16	COHEN, ADRIENNE J.	63.5	90
05/31	COLONNA, KARLA A.	12.3	100
01/15	MALTBY, JUDY L.	30.0	100
12/06	PHILLIPS, AMY S.	14.5	100
05/31	STYGAR, THOMAS STANLEY	27.0	95
12/06	WARD, NANCY C.	23.0	100
02/01	WILLIAMS, CHERYL L.	18.0	100

SUMMARY

DATE OF REPORT=01/06/73
MODULE NUMBER=1
TOTAL NO. OF STUDENTS=8
TIME AVG = 25.3
PROFICIENCY AVG = 95.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
05/02	CHAMBERS, WILLIAM N.	19.5	80
12/20	COHEN, ADRIENNE J.	114.5	100
05/31	COLONNA, KARLA A.	22.0	100
01/15	MALTBY, JUDY L.	30.0	100
12/06	PHILLIPS, AMY S.	22.0	100
05/31	STYGAR, THOMAS STANLEY	15.5	95

```
DATE COMPLETED      NAME                          TIME     PROFICIENCY
12/06               WARD, NANCY C.                49.0         100
02/01               WILLIAMS, CHERYL L.           37.0         100
•••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
                      SUMMARY
DATE OF REPORT=01/06/73  MODULE NUMBER=2          TOTAL NO. OF STUDENTS=8
TIME AVG = 38.7          PROFICIENCY AVG = 96.0
```

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

```
DATE COMPLETED      NAME                          TIME     PROFICIENCY
01/18               BREZIN, MICHAEL J.            30.0          90
05/02               CHAMBERS, WILLIAM N.          28.8          80
12/20               COHEN, ADRIENNE J.           109.0         100
05/31               COLONNA, KARLA A.             38.0         100
01/15               MALTBY, JUDY L.               60.0         100
12/06               PHILLIPS, AMY S.              32.5         100
05/31               STYGAR, THOMAS STANLEY        11.5          95
12/06               WARD, NANCY C.                53.0         100
02/01               WILLIAMS, CHERYL L.           34.0         100
•••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
                      SUMMARY
DATE OF REPORT=01/06/73  MODULE NUMBER=3          TOTAL NO. OF STUDENTS=9
TIME AVG = 44.1          PROFICIENCY AVG = 96.0
```

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
02/21	BREZIN,MICHAEL J.	2.0	100
02/21	CHAMBERS,WILLIAM N.	20.0	100
02/21	CHOPPIN, SUZANNE M.	3.0	100
02/21	COHEN,ADRIENNE J.	17.5	100
02/26	COLONNA, KARLA A.	5.5	100
03/14	GRIFFIN, SUSAN DIANE	2.0	100
02/28	MALTBY, JUDY L.	1.0	100
02/21	PHILLIPS, AMY S.	4.0	100
02/28	WILLIAMS, CHERYL L.	5.0	100

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER=20 TOTAL NO. OF STUDENTS = 9
TIME AVG = 6.7 PROFICIENCY AVG = 100.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
03/14	BREZIN, MICHAEL J.	47.5	90
03/14	CHOPPIN, SUZANNE M.	68.5	90
05/31	COHEN, ADRIENNE J.	50.5	100
03/14	COLONNA, KARLA A.	85.0	80
03/14	GRIFFIN, SUSAN DIANE	122.5	70

DATE COMPLETED	NAME	TIME	PROFICIENCY
03/14	MALTBY, JUDY L.	82.0	90
03/14	MURPHY, THERESA C.	88.0	90
03/14	OLSON, DEBRA JEAN	92.0	70
02/28	PHILLIPS, AMY S.	72.0	100
03/07	STONE, JUDY A.	60.0	90
03/14	STYGAR, THOMAS STANLEY	145.0	80
03/14	WILLIAMS, CHERYL L.	68.0	70

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER= 21 TOTAL NO. OF STUDENTS = 12
TIME AVG = 81.7 PROFICIENCY AVG = 85.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
05/31	BREZIN, MICHAEL J.	28.0	81
05/31	CHOPPIN, SUZANNE M.	32.0	98
05/31	COHEN, ADRIENNE J.	41.0	95
05/31	COLONNA, KARLA A.	19.0	87
05/31	GRIFFIN, SUSAN DIANE	27.5	95
05/31	MALTBY, JUDY L.	40.3	90
05/31	MATHEWS, STELLA M.	24.0	90
05/31	PHILLIPS, AMY S.	7.0	91

DATE COMPLETED	NAME	TIME	PROFICIENCY
05/31	STONE, JUDY A.	38.0	83
05/30	WILLIAMS, CHERYL L.	25.0	75

……

SUMMARY

DATE OF REPORT=01/06/73
MODULE NUMBER = 22
TOTAL NO. OF STUDENTS = 10
TIME AVG = 28.2
PROFICIENCY AVG = 88.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
11/10	ADKINS, LEA	10.0	100
11/10	BRZOSKA, KEN	2.2	100
11/10	LIPNER LAURA	12.0	100
02/23	MAXSON, BONNIE	18.0	100
11/17	MOSTER, RANDY	12.0	100
11/10	PATRICK, FRANCES	19.0	100
11/02	THIEBAUD, CYNTHIA J.	2.0	80
11/10	TURNER, KAREN	16.5	100
12/04	VLOEDMAN, KATHY	18.5	100
10/20	WILLIAMS, GLORIA	4.8	100

……

SUMMARY

DATE OF REPORT=01/06/73
MODULE NUMBER=23
TOTAL NO. OF STUDENTS=10
TIME AVG = 11.5
PROFICIENCY AVG = 98.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
11/13	ADKINS, LEA	13.0	100
02/22	BRZOSKA, KEN	59.5	100
11/10	LIPNER, LAURA	24.0	100
11/10	MAXSON, BONNIE	31.7	100
10/13	PATRICK, FRANCES	18.0	100
10/20	THIEBAUD, CYNTHIA J.	42.5	90
10/13	TURNER, KAREN	21.5	100
11/17	VLOEDMAN, KATHY	43.5	100
10/13	WILLIAMS, GLORIA	7.8	100

……

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER=24 TOTAL NO. OF STUDENTS=9
TIME AVG = 29.1 PROFICIENCY AVG = 98.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
11/10	ADKINS, LEA	7.0	100
11/10	BRZOSKA, KEN	5.4	100
02/23	LIPNER, LAURA	11.0	100
11/17	MAXSON, BONNIE	14.5	100
10/20	PATRICK, FRANCES	11.0	95

DATE COMPLETED	NAME	TIME	PROFICIENCY
10/27	THIEBAUD, CYNTHIA J.	13.0	100
11/02	TURNER, KAREN	6.5	100
11/17	VLOEDMAN, KATHY	26.5	100
10/20	WILLIAMS, GLORIA	8.0	90

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER=25 TOTAL NO. OF STUDENTS=9
TIME AVG = 11.4 PROFICIENCY AVG = 98.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
10/13	ADKINS, LEA	3.2	100
02/22	BRZOSKA, KEN	10.1	100
10/13	LIPNER, LAURA	12.0	100
02/23	MAXSON, BONNIE	2.1	100
11/10	MOSTER, RANDY	18.0	100
11/10	PATRICK, FRANCES	7.0	100
10/20	THIEBAUD, CYNTHIA J.	15.0	100
11/17	TURNER, KAREN	13.0	100
11/17	VLOEDMAN, KATHY	10.0	100
10/2	WILLIAMS, GLORIA	8.3	100

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER = 26 TOTAL NO. OF STUDENTS = 10
TIME AVG = 9.9 PROFICIENCY AVG =100.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
12/04	ADAMS, DIANNE	6.0	100
02/23	ADKINS, LEA	3.8	100
02/22	BRZOSKA, KEN	8.8	100
02/23	LIPNER, LAURA	2.0	100
02/23	MAXSON, BONNIE	0.0	100
10/20	PATRICK, FRANCES	6.0	95
11/17	THIEBAUD, CYNTHIA J.	9.5	100
10/20	TURNER, KAREN	8.2	95
12/04	VLOEDMAN, KATHY	6.0	100
11/10	WILLIAMS, GLORIA	3.0	90

SUMMARY

DATE OF REPORT=01/06/73
MODULE NUMBER = 27
TOTAL NO. OF STUDENTS = 10
TIME AVG = 5.3
PROFICIENCY AVG = 98.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
12/04	ADAMS, DIANNE	10.0	100
02/23	ADKINS, LEA	5.0	10
02/22	BRZOSKA, KEN	20.0	100
02/23	LIPNER, LAURA	10.5	100
02/23	MAXSON, BONNIE	5.3	100

DATE COMPLETED	NAME	TIME	PROFICIENCY
11/10	PATRICK, FRANCES	7.0	90
11/17	THIEBAUD, CYNTHIA J.	0.0	100
11/17	TURNER, KAREN	9.0	100
12/14	VLOEDMAN, KATHY	15.0	100
11/10	WILLIAMS, GLORIA	4.0	90

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER = 28 TOTAL NO. OF STUDENTS = 10
TIME AVG = 8.6 PROFICIENCY AVG = 98.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
12/04	ADAMS, DIANNE	5.0	100
02/22	BRZOSKA, KEN	15.0	100
02/23	LIPNER, LAURA	3.5	100
03/02	MAXSON, BONNIE	0.0	90
11/17	PATRICK, FRANCES	3.0	100
11/17	THIEBAUD, CYNTHIA J.	0.0	100
11/17	TURNER, KAREN	0.0	100
11/03	VLOEDMAN, KATHY	6.0	100
02/23	WILLIAMS, GORIA	5.5	100

SUMMARY

DATE OF REPORT=01/06/73 MODULE NUMBER=29 TOTAL NO. OF STUDENTS=9
TIME AVG = 4.2 PROFICIENCY AVG = 98.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
02/22	ADAMS, DIANNE	44.0	100
02/23	ADKINS, LEA	60.0	100
02/22	BRZOSKA, KEN	40.0	100
02/23	LIPNER, LAURA	80.5	100
02/23	MAXSON, BONNIE	5.2	100
02/23	PATRICK, FRANCES	55.5	100
02/23	WILLIAMS, GLORIA	41.5	100

SUMMARY

DATE OF REPORT=01/06/73
TIME AVG = 46.7
MODULE NUMBER=30
PROFICIENCY AVG = 100.0
TOTAL NO. OF STUDENTS=7

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
02/23	ADAMS, DIANNE	20.0	100
03/16	ADKINS, LEA	30.0	100
02/22	BRZOSKA, KEN	28.0	100
02/23	PATRICK, FRANCES	15.0	100

SUMMARY

DATE OF REPORT=01/06/73
TIME AVG = 23.2
MODULE NUMBER=31
PROFICIENCY AVG = 100.0
TOTAL NO. OF STUDENTS=4

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
02/23	ADAMS, DIANNE	22.0	100
02/23	ADKINS, LEA	98.0	100
02/22	BRZOSKA, KEN	27.0	100
02/23	LIPNER, LAURA	9.0	100
02/23	PATRICK, FRANCES	27.0	100
02/05	TURNER, KAREN	30.6	100
02/06	WILLIAMS, GLORIA	17.5	100

SUMMARY

DATE OF REPORT=01/06/73
MODULE NUMBER=32
TOTAL NO. OF STUDENTS=7
TIME AVG = 33.0
PROFICIENCY AVG = 100.0

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED	NAME	TIME	PROFICIENCY
02/23	ADAMS, DIANNE	43.0	100
03/13	ADKINS, LEA	40.0	90
02/22	BRZOSKA, KEN	50.0	100
02/23	LIPNER, LAURA	40.0	100
03/15	PATRICK, FRANCES	20.0	95
02/21	VLOEDMAN, KATHY	16.0	100

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●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
                           SUMMARY
DATE OF REPORT=01/06/73    MODULE NUMBER=40          TOTAL NO. OF STUDENTS=6
TIME AVG = 34.8            PROFICIENCY AVG = 97.0


            GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED       NAME                           TIME      PROFICIENCY
02/23                ADAMS, DIANNE                  13.0          100
03/13                ADKINS, LEA                   120.0           90
02/22                BRZOSKA, KEN                  100.0          100
03/15                PATRICK, FRANCES               24.0           90
●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●
                           SUMMARY
DATE OF REPORT=01/06/73    MODULE NUMBER = 41        TOTAL NO. OF STUDENTS = 4
TIME AVG = 64.2            PROFICIENCY AVG = 95.0


            GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

DATE COMPLETED       NAME                           TIME      PROFICIENCY
02/23                ADAMS, DIANNE                  17.0          100
03/16                ADKINS, LEA                    40.0           90
02/22                BRZOSKA, KEN                   50.0          100
02/23                LIPNER, LAURA                  15.0          100
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DATE COMPLETED     NAME                          TIME     PRC.FICIENCY
02/23              MAXSON, BONNIE                 0.0        100
02/23              PATRICK, FRANCES              12.0        100
02/21              VLOEDMAN, KATHY                6.0        100
••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
                         SUMMARY
DATE OF REPORT=01/06/73  MODULE NUMBER=42           TOTAL NO. OF STUDENTS=7
TIME AVG = 20.0          PROFICIENCY AVG = 98.0
```

GROUP CLINICAL TEACHER TRAINEE PERFORMANCE REPORT

```
DATE COMPLETED     NAME                          TIME     PROFICIENCY
03/13              ADKINS, LEA                  160.0         90
03/15              PATRICK, FRANCES              45.0        100
04/06              WILLIAMS, GLORIA              44.0         90
••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••••
                         SUMMARY
DATE OF REPORT=01/06/3   MODULE NUMBER/43           TOTAL NO. OF STUDENTS=3
TIME AVG = 83.0          PROFICIENCY AVG. = 93.0
```

APPENDIX I

METROPOLITAN ACHIEVEMENT TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL TEACHER AND COMPARISON GROUPS

LEGEND FOR RAW SCORES ON METROPOLITAN ACHIEVEMENT TEST

Test Level 1 (Column 6): Subtests (Columns 7-16):	*Primer* 1. Listening for Sounds 2. Reading 3. Numbers
Test Level 2 (Column 6): Subtests (Columns 7-24):	*Primary I* 1. Word Knowledge 2. Word Analysis 3. Reading 4. Total Reading 5. Total Mathematics
Test Level 3 (Column 6): Subtests (Columns 7-38):	*Primary II* 1. Word Knowledge 2. Word Analysis 3. Reading 4. Total Reading 5. Spelling 6. Mathematics Computation 7. Mathematics Concepts 8. Mathematics Problem Solving 9. Total Mathematics

Test Level 4 (Column 6): *Elementary*

Subtests (Columns 7-38):

1. Word Knowledge
2. Reading
3. Total Reading
4. Language
5. Spelling
6. Mathematics Computation
7. Mathematics Concepts
8. Mathematics Problem Solving
9. Total Mathematics

Test Level 5 (Column 6): *Intermediate*

Subtests (Columns 7-38):

1. Word Knowledge
2. Reading
3. Total Reading
4. Language
5. Spelling
6. Mathematics Computation
7. Mathematics Concepts
8. Mathematics Problem Solving
9. Total Mathematics
10. Science
11. Social Studies

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	101*	07	10	1	19	26		17	27		19	30																									
1	101**	08	05	1	37	43		28	35		31	47																									
1	102	09	11	1	24	29		17	27		15	26																									
1	102	10	06	1	27	31		21	29		21	31																									
1	103	07	10	1	13	23		16	27		9	20																									
1	103	07	07	1	23	28		21	29		20	30																									
1	104	08	02	1	18	26		19	28		18	29																									
1	104	08	09	1	25	29		23	30		30	43																									
1	105	08	08	1	20	27		21	29		22	32																									
1	105	09	03	1	37	43		29	36		33	55																									
1	106	10	06	1	21	27		23	30		28	37																									
1	106	11	01	1	38	46		32	42		34	60																									
1	107	10	04	1	23	28		19	28		28	37																									
1	107	10	11	1	30	33		21	29		32	51																									
1	108	11	02	1	15	24		18	28		20	30																									
1	108	11	09	1	33	36		32	42		26	35																									
1	109	12	03	1	19	26		19	28		28	37																									

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
S.S =Standard score
G.E.S.=Grade Equivalent score

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	109	12	10	1	36	40		29	36		33	35																									
1	110	08	01	1	19	26		18	28		27	36																									
1	110	08	08	1	25	29		26	33		29	39																									
2	111	09	10	1	18	26		14	26		11	22																									
2	111	10	05	1	27	31		24	31		27	36																									
1	114	11	05	2	15	30	14	18	33	14	17	37	16	32	33	15	49	52	23																		
1	114	12	00	2	26	43	19	33	46	23	25	43	19	51	43	20	55	59	29																		
1	115	12	01	2	21	37	16	25	36	16	21	41	18	46	39	18	41	44	19																		
1	115	12	08	2	30	47	22	38	56	32	24	42	19	54	44	20	41	42	18																		
1	116	12	06	2	24	41	18	27	37	17	21	41	18	45	41	19	52	55	25																		
1	116	13	01	2	30	47	22	27	39	18	27	44	19	57	45	21	57	64	32																		
1	117	12	03	2	25	42	19	21	34	15	21	41	18	46	41	19	50	53	24																		
1	117	12	10	2	29	46	21	30	43	20	33	47	22	62	46	22	49	51	23																		
1	118	11	06	2	12	27	13	9	24	10	19	39	17	31	32	15	40	42	18																		
1	118	12	01	2	19	35	15	33	46	23	12	29	13	31	32	15	48	46	20																		
1	119	10	09	2	14	29	13	15	31	13	14	33	14	28	29	14	40	42	18																		
1	119	11	04	2	25	42	19	26	38	18	30	46	21	55	44	20	47	49	22																		
3	120	08	10	2	29	46	21	30	39	18	28	45	20	58	45	21	31	35	14																		

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
S.S =Standard score
G.E.S.=Grade Equivalent score

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
3	120	09	05	2	34	57	30	30	43	20	39	55	28	73	55	29	50	52	23																		
3	121	09	11	2	34	57	30	37	46	23	37	51	25	71	51	25	42	45	19																		
3	121	10	06	2	35	67	41	38	56	32	39	55	28	74	57	31	53	55	25																		
3	122	08	07	2	23	40	18	21	34	15	14	33	15	37	36	16	39	42	18																		
3	122	09	02	2	24	41	18	32	45	22	24	42	18	48	42	19	53	55	25																		
3	123	08	10	2	18	34	15	20	34	15	20	40	18	39	37	17	36	38	16																		
3	123	09	05	2	23	40	18	28	40	19	19	39	17	42	39	18	42	40	19																		
4	125	14	02	2	33	52	25	36	45	22	36	50	24	69	49	24	61	83	51																		
4	125	14	09	2	35	67	41	39	58	34	42	74	49	77	74	50	61	83	51																		
4	126	11	06	2	30	47	22	30	42	20	36	50	24	66	48	23	59	71	38																		
4	126	11	07	2	34	57	30	33	46	23	33	47	22	67	48	23	61	83	51																		
4	127	12	03	2	27	44	19	25	36	16	23	42	18	50	42	19	52	55	25																		
4	127	12	10	2	30	47	22	31	44	21	20	40	17	50	42	19	59	71	38																		
4	128	14	02	2	27	44	20	20	34	15	16	35	15	43	40	18	45	48	21																		
4	128	14	09	2	31	49	20	27	39	23	35	49	18	66	48	23	56	62	23																		
2	129	11	01	3	14	44	20	11	35	16	02	13	10	16	27	14	01	35	10	08	35	15	12	34	15	09	35	15	29	34	15						
2	129	11	08	3	25	51	25	19	45	22	14	38	16	39	47	23	11	47	22	23	59	32	27	58	30	18	53	27	68	59	29						
2	130	11	02	3	23	52	26	23	50	26	05	20	11	28	41	19	18	53	26	07	33	15	11	32	14	09	35	15	27	41	18						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
S.S =Standard score
G.E.S.=Grade Equivalent score

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
2	130	11	09	3	35	61	38	26	53	29	28	53	27	63	55	29	24	58	30	33	82	55	24	53	27	23	62	32	80	65	33						
2	131	09	10	3	10	39	17	11	35	16	15	40	17	25	38	17	06	41	17	10	40	18	19	48	22	00	23	00	29	32	14						
2	131	10	05	3	27	54	27	23	50	26	18	46	21	45	49	24	10	46	21	27	63	36	31	63	34	21	58	30	79	65	33						
2	132	09	11	1	31	34		13	26		27	36																									
2	132	10	06	1	20	27		24	31		28	37																									
2	133	09	11	3	24	52	25	19	45	22	19	47	22	43	49	24	21	56	28	12	45	21	19	48	22	00	21	00	31	25	11						
2	133	10	06	3	33	61	34	34	67	47	15	40	10	50	50	25	17	52	25	10	40	19	25	54	27	23	61	31	58	52	24						
2	134	09	10	3	05	29	13	10	33	14	03	15	10	08	13	10	03	38	15	16	50	25	16	42	19	10	38	17	36	40	14						
2	134	10	05	3	28	53	26	23	50	26	24	50	24	52	50	25	19	54	26	30	73	45	33	69	40	20	56	29	83	67	35						
4	135	12	00	3	16	47	22	23	50	26	20	48	22	36	47	22	15	50	23	20	54	28	25	54	27	18	52	26	63	56	26						
4	135	12	07	3	29	54	27	24	51	27	38	61	35	67	57	31	24	58	29	24	60	33	30	63	34	23	61	31	77	64	32						
4	136	11	08	3	20	50	24	18	44	21	16	42	18	36	47	22	22	56	28	26	62	35	23	52	26	21	57	29	70	58	28						
4	136	12	03	3	33	58	31	22	49	25	41	65	38	74	61	35	26	60	31	31	77	49	33	69	40	28	66	35	92	74	41						
3	138	13	03	3	27	54	27	29	56	32	26	51	25	54	51	25	24	58	29	16	50	25	18	46	21	10	35	15	43	48	21						
3	138	13	10	3	32	57	30	26	53	29	33	56	29	65	55	29	28	64	36	23	59	32	22	51	25	14	48	22	59	55	25						
1	139	10	01	3	19	50	24	18	44	21	16	42	18	35	46	22	06	41	17	17	51	26	15	40	17	10	38	17	42	47	20						
1	139	10	08	3	24	51	24	19	45	22	28	53	26	62	54	28	14	49	23	24	60	33	28	59	31	24	62	32	76	63	32						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
S.S =Standard score
G.E.S.=Grade Equivalent score

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
4	140	11	09	4	27	60	33	10	41	18	37	54	28	09	48	19	19	61	33	10	47	22	10	49	23	05	39	17	25	45	19						
4	140	12	04	4	36	67	41	25	64	37	61	65	39	13	55	25	33	72	47	18	61	34	22	67	38	19	69	38	59	69	36						
3	141	12	07	4	29	62	35	22	57	30	47	69	33	37	81	56	14	57	29	31	77	49	32	82	57	30	85	60	92	96	54						
3	141	13	02	4	39	70	45	24	63	36	63	66	41	34	78	51	20	61	33	38	95	71	36	90	73	34	99	83	99	99	76						
3	142	10	11	4	32	64	37	21	60	33	53	61	35	22	66	35	15	58	29	28	72	44	21	66	37	16	65	34	64	61	38						
3	142	11	06	4	40	72	48	33	75	51	73	73	49	36	80	54	23	63	35	32	79	51	25	71	42	30	35	60	87	83	51						
3	143	13	00	4	15	51	24	14	50	24	29	49	24	13	55	25	07	51	24	13	53	28	19	63	34	15	64	33	47	63	32						
3	143	13	07	4	14	49	22	13	49	23	27	48	23	18	61	31	10	54	26	22	65	38	16	59	31	12	58	29	50	64	32						
3	144	12	05	4	13	48	22	19	57	30	32	51	25	28	72	43	10	54	26	21	64	37	26	72	44	15	64	33	62	70	37						
3	144	13	02	4	23	58	31	31	72	47	54	61	35	23	67	36	08	52	25	25	68	41	20	64	35	12	58	29	57	68	35						
3	145	12	00	4	13	48	22	19	57	30	32	51	25	18	61	31	11	55	27	27	71	43	19	63	34	14	62	32	60	69	36						
3	145	12	07	4	27	60	33	13	49	23	40	55	29	19	63	32	16	58	29	36	88	62	25	71	42	16	65	34	76	77	44						
3	146	09	11	4	19	55	28	14	50	24	33	52	26	11	52	23	05	48	22	14	55	29	20	64	33	15	64	33	49	64	32						
3	146	10	06	4	23	58	31	19	57	30	42	56	30	18	61	31	13	56	28	26	69	42	14	56	30	16	65	34	56	67	35						
1	148	12	11	4	31	64	37	14	50	34	45	58	32	12	54	24	12	56	28	11	49	24	10	49	23	07	45	21	28	48	21						
1	148	13	06	4	35	67	41	25	64	37	60	64	38	21	65	34	26	65	37	28	72	44	18	61	32	16	65	34	62	70	37						
1	149	13	07	4	19	55	28	19	57	30	28	48	23	12	54	24	11	55	27	23	66	39	19	63	34	12	58	29	54	66	34						
1	149	14	02	4	26	60	33	23	62	35	49	59	33	28	72	43	16	58	29	34	82	55	25	71	42	25	76	46	84	81	48						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S G.E.S), (R.S., S.S, G.E.S)
...in subtest 1, 2....
where R.S.=Raw score
S.S =Standard score
G.E.S.=Grade Equivalent score

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	150	12	03	4	31	64	37	19	57	30	50	60	34	13	55	25	15	58	29	07	40	18	09	47	21	11	55	28	27	47	21						
1	150	12	10	4	40	72	48	31	72	47	71	71	46	17	60	30	27	66	39	24	67	40	26	72	44	15	64	33	65	71	38						
5	152	11	01	4	15	51	24	19	57	30	34	52	26	14	56	26	02	42	18	17	60	33	20	64	35	07	45	21	44	61	30						
5	152	11	06	4	19	55	28	17	55	28	36	53	27	15	57	27	15	58	30	30	75	47	26	72	44	25	76	46	81	80	47						
5	153	09	01	4	11	45	20	15	52	26	26	47	22	16	59	29	09	53	25	20	63	36	18	61	32	11	55	28	69	60	30						
5	153	10	04	4	26	60	33	21	60	33	47	59	33	15	57	27	14	57	29	15	57	31	09	47	22	12	58	30	36	56	26						
5	154	11	04	5	11	55	28	08	50	24	19	51	25	45	80	54	12	62	34	08	65	38	15	73	46	06	59	29	29	72	39						
5	154	10	10	5	18	66	39	14	65	38	32	64	33	34	74	46	37	90	73	15	77	49	13	72	44	10	70	39	38	77	44	47	84	60	34	74	45
5	155	12	02	4	13	48	22	22	61	34	35	53	[illegible]	32	76	48	25	65	37	38	95	71	18	61	32	22	72	41	78	78	45						
5	155	12	07	4	44	78	58	25	64	37	69	70	45	33	77	50	33	72	47	35	85	59	29	77	51	12	58	30	76	77	44						
5	156	08	04	3	10	39	17	10	33	14	08	26	12	18	29	13	03	38	14	16	50	25	18	46	21	02	22	10	36	40	17						
5	156	08	08	3	18	48	23	14	40	19	18	46	21	36	46	21	09	45	20	25	61	34	28	59	31	15	50	24	68	59	29						
5	157	10	03	3	30	55	28	19	45	22	28	52	26	58	52	26	10	46	21	22	56	30	27	58	30	18	52	26	67	57	27						
5	157	10	08	3	31	56	29	19	45	22	37	60	33	68	57	31	19	54	26	26	63	36	29	61	33	26	64	33	81	66	34						
5	158	10	00	3	17	48	22	28	55	31	18	46	21	63	54	28	17	52	25	19	53	28	24	53	27	22	58	29	65	56	26						
5	158	10	05	3	17	47	22	16	42	20	20	48	23	37	46	22	23	57	29	29	69	42	28	39	21	27	65	34	84	67	35						
5	159	10	03	3	34	59	32	27	54	30	36	56	29	70	57	31	22	56	28	24	58	32	25	54	27	29	68	37	78	62	31						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
5	159	10	08	3	38	67	41	30	58	34	38	61	34	76	62	36	29	69	43	29	69	42	31	65	36	32	78	49	92	74	41						
5	160	08	11	3	13	43	19	08	29	12	11	32	15	24	37	17	00	34	10	08	44	21	12	34	14	19	54	27	39	44	19						
5	160	09	04	3	18	48	23	13	42	20	16	42	19	34	46	22	01	35	13	11	43	20	10	31	13	11	43	20	32	36	15						
5	161	09	05	3	09	37	17	11	35	16	12	34	15	21	34	16	04	39	15	14	48	23	16	42	19	13	45	21	43	48	21						
5	161	09	10	3	13	42	19	14	40	19	16	42	19	29	41	19	14	49	23	14	48	23	18	46	21	15	50	24	47	50	23						
5	162	10	00	3	22	51	25	15	41	20	24	50	24	46	49	24	15	50	24	31	77	49	24	53	27	22	58	30	77	62	31						
5	162	11	06	3	27	52	25	20	46	23	28	53	27	55	51	25	22	56	28	30	73	45	30	63	34	25	63	33	85	68	36						
5	163	09	01	3	09	37	17	10	33	14	09	28	13	18	29	14	09	45	20	09	37	17	09	29	12	23	60	30	41	46	20						
5	163	09	06	3	25	51	25	23	50	26	15	40	18	40	47	23	13	49	23	25	61	34	27	58	30	15	50	24	67	58	28						
5	164	12	02	5	15	62	35	14	65	38	29	62	36	23	63	32	13	63	35	06	61	34	14	72	44	10	70	39	30	72	39	12	56	24	26	69	37
5	164	12	09	5	29	77	56	18	71	45	47	74	50	39	77	50	22	75	50	20	83	56	17	78	52	16	80	52	53	85	53	36	77	50	20	63	30
5	165	12	10	5	11	55	45	13	63	36	24	57	31	26	67	36	20	70	42	11	70	42	21	83	59	07	62	32	39	78	45	22	68	55	28	70	39
5	165	12	03	5	21	69	44	14	65	38	35	67	42	24	64	33	21	73	48	11	70	44	14	73	46	09	68	37	34	75	42	30	74	44	19	68	29
5	166	12	01	5	16	64	37	10	55	28	26	59	33	26	67	36	13	63	35	10	68	41	12	69	40	04	52	26	26	69	36	18	64	30	16	58	24
5	166	12	06	5	22	70	45	11	58	31	33	65	39	35	75	50	18	70	44	23	86	60	22	85	63	19	84	58	64	89	59	39	78	51	25	68	36
6	168	10	04	5	16	64	37	12	61	34	28	61	35	25	65	34	14	64	36	12	72	44	12	69	40	12	74	44	36	76	43	26	71	39	45	80	53
6	168	10	11	5	23	71	47	15	67	41	38	69	44	48	82	57	18	70	44	14	75	47	20	83	59	14	78	49	48	82	49						
6	169	09	07	3	11	41	19	05	21	10	19	47	22	30	43	20	02	36	14	27	65	38	24	53	27	18	52	26	69	58	28						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	24	25	26	27	38
6	169	10	02	3	13	42	19	18	44	21	17	44	20	30	42	20	09	45	20	21	56	30	29	61	33	19	55	28	69	60	30						
6	170	08	06	3	05	29	14	11	35	16	11	32	15	26	27	14	06	32	13	12	34	15	05	26	12	24	30	13	25	45	19						
6	170	09	01	3	19	48	23	15	41	20	13	36	16	32	43	20	07	43	19	16	50	25	17	44	20	15	50	24	48	51	23						
6	171	10	09	5	01	24	12	04	38	17	05	18	12	14	51	22	02	39	15	16	61	34	08	62	33	04	52	26	18	66	30	04	45	20	25	68	36
6	171	11	04	5	15	62	35	11	58	31	26	59	33	37	76	48	24	77	52	11	70	43	12	71	42	12	74	44	35	75	45						
6	172	13	02	5	12	57	30	05	42	19	17	48	23	20	59	29	02	39	15	01	37	17	02	40	18	03	47	22	06	38	16	11	55	22	10	56	20
6	172	13	09	5	17	65	38	12	61	34	29	62	36	35	75	47	19	71	46	09	67	40	09	65	36	09	68	37	27	70	37						
6	175	10	00	5	10	53	26	11	58	31	21	53	27	20	59	29	12	62	34	05	58	32	15	73	46	11	72	41	31	73	40	23	69	36	39	77	49
6	175	10	07	5	29	77	56	24	79	57	53	78	56	40	78	51	19	71	46	17	79	51	23	87	67	11	72	41	51	84	52						
6	176	11	03	5	15	62	35	12	61	34	27	60	34	34	74	46	25	76	51	04	55	29	07	60	32	14	78	49	22	68	36	43	81	55	37	76	48
6	176	11	10	5	32	80	61	34	88	73	66	85	67	58	86	64	26	79	56	20	83	56	25	89	71	27	97	77	72	92	64						
6	178	09	05	3	24	52	25	22	49	25	31	53	27	55	52	26	15	50	24	20	54	29	26	56	29	14	47	22	60	55	25						
6	178	10	00	3	19	48	23	14	40	19	35	58	31	54	51	25	22	56	28	25	61	34	27	58	30	22	59	30	74	62	31						
6	179	12	05	5	18	66	39	15	67	41	33	65	39	15	52	23	16	66	39	09	67	40	06	57	30	07	62	32	22	65	33	13	57	25	17	59	25
6	179	13	00	5	20	68	42	15	67	41	35	67	42	52	84	60	14	65	37	15	77	49	15	75	48	09	68	37	39	78	45						
6	181	12	02	5	05	43	20	05	42	19	10	34	16	16	54	24	07	53	26	05	58	32	05	54	28	09	68	37	19	61	31	17	63	29	25	68	36
6	181	12	09	5	18	66	39	17	70	44	35	67	42	29	70	40	24	77	52	23	86	60	14	73	46	11	72	41	48	82	49						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
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Columns (6, 7, 8), (9, 10, 11). . . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
7	182	09	10	5	15	62	35	15	67	41	30	63	37	25	65	34	23	74	49	09	67	40	09	64	35	08	65	34	26	69	36	23	69	36	27	70	39
7	182	10	05	5	16	64	37	29	84	65	45	73	49	33	73	45	15	66	39	14	75	47	09	65	36	12	74	44	35	75	42						
7	183	07	02	2	16	31	14	10	26	11	17	37	16	31	32	15	25	32	13																		
7	183	07	09	2	25	42	19	35	49	25	15	34	15	40	39	18	41	42	18																		
7	184	10	00	5	06	46	21				15	45	21	20	59	33	14	64	36	09	67	40	05	55	28	09	68	37	23	66	34	10	54	21	24	67	35
7	184	10	07	5	15	62	35	14	65	38	29	62	36	24	64	33	23	76	51	10	68	41	16	76	49	08	65	34	35	75	42						
7	185	08	03	3	22	50	24	25	52	28	21	49	23	43	48	23	23	57	29	17	51	26	26	56	29	17	52	26	60	53	24						
7	185	08	10	3	22	50	24	25	52	28	21	49	23	43	48	23	23	57	29	17	51	26	26	56	29	17	52	26	60	53	24						
7	186	08	00	3	04	27	13	13	38	18	10	31	14	15	26	13	06	41	17	09	37	17	12	35	15	08	34	15	29	34	14						
7	186	08	07	3	11	40	18	11	35	16	14	39	17	36	46	22	02	37	14	13	46	22	20	49	23	15	49	23	48	51	23						
7	187	10	01	4	05	34	15	06	31	14	12	26	13	04	40	14	19	61	33	14	55	29	05	39	17	08	49	23	27	47	21						
7	187	10	08	4	11	45	20	15	52	26	27	48	23	17	60	30	02	42	18	06	39	18	10	48	22	00	00	00	16	38	16						
2	188	11	01	2	18	34	15	18	33	14	15	34	14	33	33	15	38	40	16																		
2	188	11	08	2	23	40	18	23	35	16	15	34	15	38	37	17	62	89	59																		
1	189	09	00	2	20	36	16	22	35	16	15	34	15	35	35	16	27	33	13																		
1	189	09	07	2	28	45	20	26	38	18	23	42	18	51	43	20	53	55	25																		
7	190	08	00	3	09	38	17	18	44	21	17	45	20	26	39	18	05	40	16	14	48	23	15	41	18	10	38	17	39	44	19						
7	190	08	07	3	11	40	18	16	42	20	21	49	23	32	43	20	14	49	23	11	43	20	21	50	24	12	45	21	44	49	22						

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Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
7	191	09	11	4	09	42	19	09	39	17	18	37	17	03	37	12	04	47	22	10	48	23	05	39	17	02	27	12	17	44	19						
7	191	10	06	4	14	49	23	13	49	23	27	48	23	18	61	31	14	57	29	20	63	36	13	55	28	11	55	28	44	62	31						
1	192	08	11	2	19	35	16	04	17	10	16	35	15	35	35	16	49	52	23																		
1	192	09	06	2	20	36	16	29	41	19	20	40	17	40	38	17	54	57	27																		
2	193	10	00	3	15	46	21	16	42	20	16	42	18	31	44	20	01	39	15	11	43	20	00	23	00	00	21	00	10	18	00						
2	193	10	07	3	29	54	27	14	40	19	14	38	17	43	48	23	11	47	22	15	49	29	32	62	33	22	59	30	69	60	30						
7	194	07	09	3	04	27	13	07	26	11	14	37	16	28	29	14				08	35	15	13	37	16	08	34	15	34	34	14						
7	194	08	03	3	07	31	14	16	42	20	03	15	10	20	32	15	05	40	16	12	45	21	20	49	23	09	34	15	41	46	20						
7	195	10	01	4	18	54	27	12	47	22	30	51	25	13	55	25				12	53	28	13	55	28	09	51	25	35	55	25						
7	195	10	08	4	29	62	35	26	66	39	55	62	36	25	69	39	17	59	30	25	68	41	22	67	38	13	61	31	60	69	36						
7	196	09	10	4	11	45	20	19	57	30	30	51	25	19	63	32				12	51	26	12	53	27	08	49	23	32	53	24						
7	196	10	05	4	24	59	32	16	54	27	40	55	29	36	80	54	24	64	36	23	66	39	23	68	39	17	66	35	63	70	37						
2	197	10	02	3	16	47	22	31	59	36	33	54	27	49	50	25	22	56	28	24	58	31	00	23	00	00	21	00	24	17	00						
2	197	10	09	3	32	57	30	30	58	34	39	62	35	71	59	33	27	62	34	29	69	42	31	65	36	27	65	34	87	69	36						
7	198	09	03	4	11	45	20	03	21	11	14	29	14	15	57	27				13	53	28	09	48	22	09	49	23	31	51	23						
7	198	10	00	4	04	31	14	08	34	15	12	26	13	05	41	15	12	56	28	24	67	40	06	41	18	00	00	00	42	60	30						
7	199	10	07	3	07	34	15	09	31	13	13	37	16	20	32	15	02	37	14	08	34	14	15	41	19	13	45	21	36	40	17						

Legend: Column 1=Teacher number
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Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
7	199	11	02	3	20	49	23	18	44	21	19	47																									
1	201	10	04	1	37	43		30	37		34	60																									
1	201	10	11	1	38	46		33	47		34	60																									
1	202	08	04	1	32	35		25	32		24	33																									
1	202	09	01	1	37	43		30	37		32	51																									
1	203	10	04	1	39	51		32	42		32	51																									
1	203	11	00	1	39	51		33	47		34	60																									
1	204	10	09	1	39	51		26	33		34	60																									
1	204	11	04	1	37	43		32	42		34	60																									
3	205	08	04	1	29	32		22	30		26	35																									
3	205	08	11	1	38	46		32	42		27	36																									
1	206	09	10	1	33	36		29	36		32	51																									
1	206	11	04	1	39	51		32	42		31	47																									
1	207	08	08	1	30	33		27	34		25	34																									
1	207	09	03	1	37	43		32	42		32	51																									
1	208	10	00	1	33	36		32	42		27	36																									
1	208	11	04	1	37	43		32	42		27	36																									
1	209	09	05	1	25	29		28	35		31	47																									

Legend. Column 1=Teacher number
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
1	209	09	10	1	31	34		33	47		29	39																									
1	210	10	02	1	37	43		32	42		33	55																									
1	210	10	08	1	38	46		32	42		34	60																									
3	211	09	01	1	37	43		33	47		33	55																									
3	211	09	08	1	36	40		30	37		33	55																									
3	212	10	11	1	36	40		28	36		32	51																									
3	212	11	05	1	32	35		30	37		34	60																									
3	213	08	05	1	36	40		27	39		29	39																									
3	213	09	00	1	38	46		31	39		32	51																									
2	214	09	00	1	35	38		31	39		31	47																									
2	214	09	07	1	36	40		33	47		33	55																									
2	215	09	10	1	26	30		23	30		33	55																									
2	215	10	05	1	32	35		25	32		31	47																									
2	216	08	00	1	20	27		29	36		21	31																									
2	216	08	07	1	32	35		27	34		21	31																									
2	217	09	09	1	20	27		18	28		26	35																									
2	217	10	04	1	32	35		28	35		27	36																									
2	218	09	04	1	37	43		28	35		28	37																									

Legend: Column 1=Teacher number
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
2	218	09	10	1	37	43		33	47		33	55																									
2	219	11	09	1	38	46		29	36		33	55																									
2	219	12	04	1	36	40		28	35		32	51																									
2	220	08	11	1	21	27		22	30		23	32																									
2	220	09	06	1	24	29		24	31		20	30																									
2	221	09	05	1	33	36		33	47		31	47																									
2	221	10	01	1	37	43		33	47		32	51																									
8	222	11	00	1	37	43		31	39		28	37																									
8	222	11	09	1	38	46		33	47		33	55																									
8	224	12	02	1	38	46		33	47		30	43																									
8	224	12	09	1	38	46		32	42		34	60																									
8	225	11	02	1	33	36		26	33		29	39																									
8	225	11	09	1	34	37		29	36		34	60																									
8	227	12	01	1	29	32		30	37		30	43																									
8	227	12	08	1	32	35		29	36		32	51																									
8	230	10	00	1	36	40		33	47		30	43																									
8	230	11	09	1	36	40		32	42		32	51																									

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
Column 5=Test level administered

Columns (6, 7, 8), (9, 10, 11). . . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
S.S =Standard score
G.E.S.=Grade Equivalent score

METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
8	231	11	05	1	37	43		32	42		32	51																									
8	231	12	00	1	35	38		32	42		32	51																									
3	232	08	10	2	18	34	15	15	31	13	12	29	13	30	31	15	42	45	20																		
3	232	09	05	2	22	38	17	23	35	16	10	27	13	25	28	14	42	44	19																		
3	233	08	10	2	23	40	18	32	41	20	15	34	15	38	37	17	36	38	16																		
3	233	09	06	2	30	47	22	31	44	21	12	29	13	27	29	14	40	41	18																		
3	235	09	05	2	24	41	19	31	40	19	7	23	12	31	32	15	38	40	17																		
3	235	09	11	2	29	46	21	31	44	21	11	28	13	36	36	17	51	53	24																		
2	238	09	06	2	31	49	23	37	40	19	20	40	18	51	43	20	48	51	23																		
2	238	10	02	2	34	57	30	37	53	29	37	51	25	71	51	25	53	55	25																		
2	239	09	02	2	29	46	21	35	44	21	24	42	19	53	43	20	51	54	24																		
2	239	09	09	2	34	57	30	35	49	25	22	41	18	56	44	21	49	51	23																		
2	240	10	06	2	34	57	30	36	45	22	32	47	22	66	48	23	36	38	16																		
2	240	11	01	2	34	57	30	37	53	29	39	55	28	73	55	29	51	53	24																		
2	241	10	09	2	30	47	22	29	38	18	22	41	18	52	42	20	49	52	23																		
2	241	11	04	2	33	52	25	27	39	18	38	53	27	71	51	25	49	51	23																		
2	242	09	03	2	34	57	30	35	44	21	35	49	23	69	49	24	48	51	23																		

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
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Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
....in subtest 1, 2....
where R.S.=Raw score
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
2	242	09	10	2	33	52	25	37	53	29	37	51	25	70	50	24	53	55	25																		
2	244	08	11	2	23	40	18	00	00	00	21	41	18	44	40	18	50	53	24																		
2	244	09	05	2	34	57	30	36	51	27	40	58	31	74	57	31	58	67	35																		
4	248	10	10	3	18	49	23	22	49	25	18	46	21	36	47	22	19	53	26	27	58	31	26	64	35	17	51	25	70	58	28						
4	248	11	05	3	26	52	25	27	54	30	15	40	17	41	47	22	25	59	30	22	57	31	30	63	34	20	56	28	72	61	30						
4	251	09	03	3	19	50	24	19	45	22	23	50	24	42	48	23	10	46	21	26	62	35	28	67	38	16	50	24	70	58	28						
4	251	09	10	3	25	51	24	21	47	24	09	28	13	34	45	21	12	48	22	24	60	33	32	67	38	21	58	29	77	63	32						
4	252	11	08	3	27	54	27	23	50	26	31	53	27	58	52	26	22	56	28	20	54	28	19	48	22	12	43	19	51	52	23						
4	252	12	03	3	36	62	35	23	50	26	36	59	32	72	59	33	22	56	28	25	61	34	23	52	26	15	50	24	63	56	26						
4	253	09	00	3	31	56	29	29	56	32	37	57	30	68	56	30	28	64	36	10	40	18	29	61	32	14	47	22	53	52	23						
4	253	09	07	3	39	74	52	32	61	38	42	70	44	81	75	52	27	62	34	29	69	42	34	71	42	29	68	37	92	92	41						
5	254	10	03	2	27	44	20	24	36	16	16	35	15	43	40	18	45	48	21																		
5	251	10	10	2	26	43	19	29	41	19	24	42	18	50	42	19	51	53	24																		
5	255	11	02	2	26	43	19	30	39	18	05	19	11	31	32	15	45	48	21																		
5	255	11	09	2	30	47	22	30	43	20	24	42	18	54	44	20	54	57	27																		
5	256	07	11	3	16	47	22	12	37	17	15	40	17	31	44	20	02	36	13	04	28	10	11	32	13	07	30	13	22	29	12						
5	256	08	06	3	20	49	23	22	49	25	13	36	16	33	44	20	16	51	24	13	46	22	16	42	18	11	43	19	40	45	19						

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
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Columns (6, 7, 8), (9, 10, 11). . . =(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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METROPOLITAN ACHIEVEMENT
TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
5	257	09	00	3	25	53	26	04	19	10	16	42	18	41	48	23	20	55	27	06	32	13	22	51	25	17	51	25	45	49	22						
5	257	09	07	3	35	61	34	26	53	29	45	86	69	80	70	45	25	59	30	20	54	28	23	52	26	19	55	28	62	54	24						
5	258	09	05	3	23	52	25	22	49	25	23	50	24	46	49	24	05	40	18	25	62	35	29	61	32	23	60	30	78	62	31						
5	258	10	00	3	37	64	37	25	52	28	31	55	28	68	57	31	11	47	22	32	82	55	35	73	46	29	68	37	96	79	46						
7	259	08	01	2	31	49	23	37	46	23	21	41	18	52	43	20	40	42	18																		
7	259	08	08	2	34	57	30	36	51	27	39	55	28	73	55	29	44	46	20																		
7	260	09	06	2	32	51	25	35	44	21	27	44	20	59	45	21	01	00	00																		
7	260	10	01	2	32	51	25	38	56	32	28	45	20	60	46	22	32	35	15																		
7	261	11	00	2	30	47	22	36	45	22	27	44	20	57	64	38	52	55	25																		
7	261	11	07	2	33	52	25	33	46	23	36	50	24	69	49	24	34	36	15																		
6	262	08	10	2	28	45	20	34	43	21	19	39	17	47	41	19	39	41	18																		
6	262	09	05	2	33	52	25	34	47	24	41	62	35	74	57	31	32	35	15																		
7	263	09	00	2	33	52	25	31	40	19	31	46	21	64	47	23	47	50	23																		
7	263	09	07	2	32	51	24	34	47	24	40	58	31	72	53	27	44	46	20																		
7	264	09	09	2	34	57	30	37	46	23	42	74	49	76	63	37	55	60	30																		
7	264	10	04	2	35	67	41	35	49	25	40	58	31	75	60	34	38	39	16																		
7	265	07	05	2	35	67	41	36	45	22	31	46	21	66	48	23	16	26	11																		
7	265	08	00	2	35	67	41	35	49	25	39	55	28	74	57	31	14	22	11																		

Legend: Column 1=Teacher number
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Columns (6, 7, 8), (9, 10, 11). . . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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TEST DATA ON PUPILS IN THE CLASSROOMS OF THE CLINICAL AND COMPARISON TEACHERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
7	266	10	09	2	30	47	22	33	42	20	20	40	18	50	42	20	49	52	24																		
7	266	11	04	2	32	51	24	32	45	22	30	46	21	62	46	22	34	36	15																		
6	268	09	04	2	33	52	25	26	37	17	19	39	17	52	43	20	20	29	12																		
6	268	09	11	2	32	51	25	28	40	19	22	41	18	54	44	21	18	26	11																		
6	270	08	05	1	28	31		13	25		27	36																									
6	270	09	00	1	37	34		23	32		27	36																									
6	271	08	01	1	30	33		27	34		27	36																									
6	271	08	08	1	37	43		31	39		23	32																									
7	272	07	10	1	30	33		25	32		23	32																									
7	272	08	05	1	35	38		25	32		31	47																									
6	273	08	03	1	27	31		21	29		25	34																									
6	273	08	10	1	31	34		27	34		30	43																									
7	275	07	01	1	26	30		24	31		15	26																									
7	275	08	04	1	37	34		30	37		21	31																									

Legend: Column 1=Teacher number
Column 2=Student number (First digit if one indicates clinical group)
Columns 3, 4=Age in years and months
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Columns (6, 7, 8), (9, 10, 11). . . .=(R.S, S.S, G.E.S), (R.S., S.S, G.E.S)
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